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Message | Principal, Northwest School of Medicine

It gives me immense pleasure to welcome you to the fourth Northwest Annual Research Conference (NARC) 2026. This abstract book stands as a testament to the vibrant and rigorous spirit that defines our institution.

The theme of this year's conference reflects our unwavering commitment to translating scholarly inquiry into tangible improvements in patient care. Within these pages, you will find a remarkable collection of work, from large-scale systematic reviews and meta-analyses that address global clinical dilemmas, to nuanced, ground-level studies tackling the unique epidemiological and healthcare challenges of our region in Khyber Pakhtunkhwa.

What is particularly heartening is the breadth and depth of participation. Alongside our esteemed faculty and clinicians, we see a robust contribution from our postgraduate trainees and, most encouragingly, our undergraduate students.

I extend my heartfelt gratitude to the Head Organizing Committee, the members of the Scientific Committee, who have worked tirelessly to ensure the quality and integrity of this scientific program. To all the presenters, I offer my congratulations. You are the driving force behind the knowledge revolution in our healthcare system.

I wish you all a productive and intellectually stimulating conference.

Prof. Dr Amir Khan
Principal
Northwest School of Medicine

Message| Chairperson Organizing Committee

It is with great pride that I present this Abstract Book for the Northwest Annual Research Conference (NARC) 2026. This compilation is more than just a collection of abstracts; it is a chronicle of our collective journey toward research excellence.

The Scientific Committee received an overwhelming number of high-quality submissions, which speaks volumes about the growing research culture and capacity within our network. As you review the contents, from the dose-dependent efficacy of novel lipid-lowering agents (MAO 1) and the comparative effectiveness of surgical techniques (SAO 3), to critical audits on patient safety (SP 19, SP 20) and explorations into medical education (BSO 2), you will observe a deliberate shift toward implementation science and patient-centered outcomes.

This year, we placed a special emphasis on studies addressing local pathologies and health system barriers, such as the demographic profiles of Carpal Tunnel Syndrome (MAO 4), and the severe institutional determinants of workplace violence against healthcare workers (BSO 4). These are not just academic exercises; they are the first steps toward meaningful health policy change.

I extend my gratitude to the Northwest Student Research Society (NSRS), whose energy and dedication have been instrumental in the success of this conference, and I would particularly like to acknowledge the invaluable contributions of our General Secretary, Northwest Student Research Society.

I commend every researcher, resident, and student who has submitted their work for rigorous peer review. Your curiosity and perseverance are the cornerstones of progress. I also thank my dedicated team on the Scientific Committee and our external reviewers, whose anonymous efforts have ensured that the work presented here meets the highest ethical and methodological standards.

May this conference serve as a productive ground for collaboration, innovation, and the birth of new ideas.

Prof. Dr. Waqar Ali
Vice Principal Research
Northwest School of Medicine
Chairperson, Organizing Committee, NARC 2026

Section A: Oral Presentations

1. Medicine and Allied

MAO 1:

Abstract Title: DOSE-DEPENDENT EFFICACY AND SAFETY OF OLEZARSEN (TRYNGOLZA) IN HYPERTRIGLYCERIDEMIA: A SYSTEMATIC REVIEW AND META-ANALYSIS WITH EXTENSIVE SUBGROUP ANALYSES

Muhammad Faaz Khan

Objective/Hypothesis: To systematically evaluate the dose-dependent efficacy and safety of olezarsen (Tryngolza), an antisense oligonucleotide targeting apolipoprotein C-III (ApoC-III), in adults with hypertriglyceridemia.

Study Design: Systematic review and meta-analysis of randomized controlled trials (RCTs) comparing olezarsen with placebo in adults with hypertriglyceridemia.

Materials and Methods: We conducted a systematic search of PubMed, Embase, Cochrane Library, and ClinicalTrials.gov from inception to November 25, 2025, for RCTs comparing olezarsen with placebo in adults with hypertriglyceridemia. Two independent reviewers screened studies and extracted data. The primary outcome was percentage change in serum triglycerides; secondary outcomes included other lipid and apolipoprotein parameters, achievement of TG <150 mg/dL, and safety. Risk of bias was assessed using the Cochrane RoB 2.0 tool, and data were pooled using random-effects meta-analysis.

Results: Five RCTs (six comparisons) involving 2,744 participants were included. Olezarsen significantly reduced TG levels (mean difference −55.42%; 95% CI −60.37 to −50.46; p<0.00001), with consistent efficacy at 50 mg and 80 mg doses. The likelihood of achieving TG <150 mg/dL was markedly increased (RR 6.98). Significant reductions were observed in ApoC-III, ApoB, VLDL-C, nonHDL-C, and remnant cholesterol, with increases in ApoA1 and HDL-C. Overall adverse events were comparable to placebo, although injection-site reactions increased dose-dependently, while acute pancreatitis was reduced. Conclusion/Recommendations: Olezarsen demonstrates robust triglyceride lowering and favorable lipid modulation with an acceptable safety profile. The 50 mg dose provides the optimal balance of efficacy and tolerability. Longer-term studies are needed to confirm durability of benefit and cardiovascular outcomes.

Keywords: Hypertriglyceridemia; Olezarsen; Apolipoprotein C-III; Triglycerides; Meta-analysis; Systematic review; Cardiovascular risk.

MAO 2:

Abstract Title: DIAGNOSTIC ACCURACY OF MRI PI-RADS TO DIAGNOSE PROSTATE CANCER, KEEPING HISTOPATHOLOGY AS GOLD STANDARD

DR GHAZALA WAHID

Objective/Hypothesis: DIAGNOSTIC ACCURACY OF MRI PI-RADS TO DIAGNOSE PROSTATE CANCER, KEEPING HISTOPATHOLOGY AS GOLD STANDARD

Study Design: This prospective single-centre diagnostic accuracy study was conducted between January 2022 and June 2023 in the Department of Radiology, Hayatabad Medical Complex, Peshawar, Pakistan, in accordance with STARD guidelines. A total of 127 men (aged 40-85 years) with elevated prostate-speci c antigen (PSA >4 ng/dL) and abnormal digital rectal examination ndings were enrolled by a consecutive sampling method. The study was conducted at the Department of Diagnostic Radiology, Hayatabad Medical Complex, Peshawar, over a period of 618months.

Materials and Methods: This prospective single-centre diagnostic accuracy study was conducted between January 2022 and June 2023 in the Department of Radiology, Hayatabad Medical Complex, Peshawar, Pakistan, in accordance with STARD guidelines. A total of 127 men (aged 40-85 years) with elevated prostate-speci c antigen (PSA >4 ng/dL) and abnormal digital rectalexamination ndings were enrolled by a consecutive sampling method. The study was conducted at the Department of Diagnostic Radiology, Hayatabad Medical Complex, Peshawar, over a period of 6 months. All participants underwent mpMRI with PI-RADS scoring followed by systematic prostate biopsy. Clinically signi cant prostate cancer was de ned as a Gleason score ≥7. Diagnostic accuracy metrics, including sensitivity, speci city, positive predictive value (PPV), negative predictive value (NPV), and overall accuracy, were calculated.

Results: Prostate cancer was histopathologically con rmed in 58.3% (74/127) of patients. Using a prede ned diagnostic threshold of PI-RADS ≥4 versus 10 ng/dL (92.5% sensitivity) and for PI-RADS 5 lesions (94.7% concordance with high-grade cancer). False negatives were predominantly anterior zone tumors (75%), while false positives were primarily due to prostatitis. Inter-reader agreement was substantial ($\kappa = 0.72$). Conclusion/Recommendations: In this study, mpMRI using PI-RADS v2 showed good diagnostic performance and reproducibility for detecting csPCa in a Pakistani cohort. Limitations persist in anterior zone assessment, and in ammatory mimics were observed, underscoring the need for careful interpretation and optimized biopsy strategies.

Keywords: Prostate Cancer, PI-RADS, Multiparametric MRI, Diagnostic Accuracy, Gleason Score, Prostate Biopsy

MAO 3:

Abstract Title: Demographic Profile and Clinical Factors Associated with Symptom Severity in Carpal Tunnel Syndrome: A Hospital Based Study from Khyber Pakhtunkhwa.

Dr. Sadiq Ali Shah

Objective/Hypothesis: To describe the demographic and clinical characteristics of patients with carpal tunnel syndrome (CTS) and to examine factors associated with moderate to severe symptom severity in a tertiary care setting of Khyber Pakhtunkhwa, Pakistan.

Study Design: Cross Sectional Study Graphic attachments (i.e. tables, illustrations and pictures):

Materials and Methods: This cross-sectional study was conducted at the Neurology Department of Lady Reading Hospital, Peshawar, from August 2024 to March 2025.We recruited 250 adult patients with clinically and electro-physiologically confirmed CTS. Demographic data, comorbid conditions, and occupational characteristics were recorded. Symptom severity was assessed using the Boston Carpal Tunnel Questionnaire (BCTQ). Logistic regression analysis was performed to identify factors associated with moderate-to-severe CTS symptoms.

Results: The mean age of the study population was 41.12 years ± 11.87 years. The study revealed a striking female predominance of 190 patients (76%), with the majority, 120 (48%), aged 36–50years. Occupations involving repetitive wrist movements accounted for 165 (66%) cases. Key comorbidities included diabetes mellitus in 95 patients (38%), obesity in 67 patients (27%), and hypothyroidism in 25 patients (10%). Socioeconomic analysis showed that 160 patients (64%) belonged to the lower-middle-income group, and 153(61%) resided in urban areas. In multivariable analysis, female gender (AOR: 2.45, $p = 0.004$), repetitive occupations (AOR: 3.11, $p < 0.001$), and diabetes mellitus (AOR: 2.08, $p = 0.017$) were independent predictors of moderate-tosevere CTS. Obesity and hypothyroidism were not statistically significant predictors.

Conclusion/Recommendations: Among patients presenting with CTS at a tertiary care hospital in Khyber Pakhtunkhwa, female sex, diabetes mellitus, and repetitive occupational activities were associated with greater symptom severity. These findings underscore the importance of targeted clinical assessment and symptom based stratification in the management of CTS within hospital based settings.

Keywords: Carpal Tunnel Syndrome, Demographics, Diabetes Mellitus, Pakistan, Metabolic Comorbidities.

MAO 4:

Abstract Title: Diagnostic Accuracy of Computed Tomography (CT) Scan in the Detection of Mandibular Invasion in Oral Squamous Cell Carcinoma (OSCC) Using Histopathology as the Gold Standard

Dr Naila Tamkeen

Objective/Hypothesis: This study aimed to evaluate the diagnostic accuracy of CT scan in detecting mandibular invasion in OSCC patients, using histopathological examination as the reference standard.

Study Design: Prospective diagnostic cohort study

Materials and Methods: This prospective cohort study was conducted at a tertiary care center over six months. One hundred and fifty-four patients with biopsy-proven OSCC scheduled for surgical resection underwent contrast-enhanced CT of the head and neck. CT images were independently evaluated by two blinded consultant radiologists for signs of mandibular invasion using predefined radiologic criteria. Histopathological examination of resected mandibular specimens served as the reference standard. Diagnostic performance parameters, including sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), likelihood ratios, and overall accuracy, were calculated.

Results: Histopathology confirmed mandibular invasion in 82 patients (53.2%). CT demonstrated a sensitivity of 69.2%, specificity of 78.4%, PPV of 80.4%, NPV of 66.7%, and an overall diagnostic accuracy of 73.3%. Diagnostic performance was significantly better for posterior mandibular tumors compared with anterior lesions. Inter-observer agreement was substantial ($\kappa = 0.72$). Lower sensitivity was observed when subtle or early cortical invasion was present.

Conclusion/Recommendations: our study confirms that while CT provides clinically useful information about mandibular invasion in OSCC, its moderate sensitivity and negative predictive value necessitate cautious interpretation. The modality performs particularly poorly for anterior tumors, where accuracy drops significantly. These findings support a nuanced, multimodal approach to preoperative assessment that incorporates clinical examination, appropriate imaging findings, and when necessary, histopathological confirmation. In CT-negative but clinically suspicious cases, particularly those involving the anterior mandible, supplemental MRI or intraoperative assessment should be strongly considered to guide appropriate surgical management and optimize patient outcomes.

Keywords: Oral cancer, squamous cell carcinoma, mandible, bone invasion, computed tomography, diagnostic imaging, sensitivity and specificity

MAO 5:

Abstract Title: Post-Tuberculosis Lung Disease and Pulmonary Hypertension: Structural Severity and Clinical Correlates from a Tertiary Care Center in Pakistan

Dr Haseeb Hayat

Objective/Hypothesis: To describe the prevalence, structural patterns, and severity of PTLD in a post-TB population and to evaluate the association between PTLD severity and pulmonary hypertension.

Study Design: Prospective cross-sectional observational study

Materials and Methods: Adults (≥18 years) with microbiologically cured pulmonary TB (≥6 months post-treatment) admitted to a tertiary care pulmonology unit in Pakistan are being enrolled consecutively. PTLD was defined as the presence of one or more structural lung abnormalities on high-resolution computed tomography (HRCT) attributable to prior TB. Structural abnormalities were graded using a semi-quantitative severity score (mild ≤25%, moderate 26–50%, severe >50% lung involvement or destroyed lung). Transthoracic echocardiography assessed pulmonary artery systolic pressure and classified PH according to ESC/ERS 2022 criteria. Spirometryand modified Medical Research Council (mMRC) dyspnea scoring were performed in clinically stable patients. Planned sample size is 110 patients; interim analysis includes 62 patients.

Results: Among 62 patients analyzed (mean age 46 ± 14 years; 61% male), HRCT demonstrated structural abnormalities attributable to prior TB, including fibrosis (63%), bronchiectasis (37%), cavitation (21%), and destroyed lung (11%). Based on extent of involvement, PTLD severity was classified as mild in 27%, moderate in 39%, and severe in 34% of patients. Pulmonary hypertension was identified in 24% of patients, with prevalence increasing with PTLD severity (mild 6%, moderate 19%, severe 48%; $p<0.01$). Greater structural severity was associated with higher dyspnea scores and functional impairment

Conclusion/Recommendations: Interim findings demonstrate a substantial burden of PTLD with varying structural severity among post-TB patients. Increasing PTLD severity is associated with a higher prevalence of pulmonary hypertension, highlighting PTLD as a clinically significant post-TB condition. Systematic post-TB assessment incorporating HRCT-based severity grading may improve recognition of PTLD and enable targeted screening for PH in high TB-burden settings

Keywords: PTLD, Pulmonary Hypertension

MAO 6:

Abstract Title: Ticagrelor-Based Antiplatelet Therapy Versus Aspirin Alone After Coronary Artery Bypass Grafting: A Systematic Review and Meta-Analysis with trial sequential analysis

Dr Naveed Ahmed Khan

Objective/Hypothesis: To compare ticagrelor-based therapy with aspirin alone after CABG

Study Design: Systematic Review and Meta Analysis

Materials and Methods: We conducted a systematic review and meta-analysis of randomized controlled trials (RCTs) comparing ticagrelor-based therapy with aspirin monotherapy in patients undergoing CABG. A comprehensive literature search of major databases was performed through August 2025. The primary endpoint was SVG failure. Secondary outcomes included stroke, myocardial infarction, repeat revascularization, major bleeding, composite cardiovascular events, and all-cause mortality. Pooled risk ratios (RR) with 95% confidence intervals (CI) were calculated using a random-effects model.

Results: Five RCTs including more than 4000 patients were identified. Ticagrelor-based therapy significantly reduced SVG failure compared with aspirin alone (RR 0.62, 95% CI 0.50–0.78, $p < 0.0001$, $I^2 = 0\%$). No significant differences were observed for stroke, myocardial infarction, repeatrevascularization, major bleeding, composite cardiovascular events, or all-cause mortality. Subgroup analyses demonstrated no meaningful difference between ticagrelor monotherapy and ticagrelor plus aspirin, with results consistent across studies.

Conclusion/Recommendations: Ticagrelor-based therapy improved graft patency after CABG but did not translate into better major clinical outcomes. While ticagrelor may be considered in highrisk patients, routine use cannot be recommended until further robust trials confirm clinical benefit

Keywords: Coronary artery bypass grafting, Ticagrelor, Aspirin, Saphenous vein graft failure, Graft patency, Dual antiplatelet therapy, P2Y12 inhibitor.

MAO 7:

Abstract Title: Comparative analysis of simplicity, safety, convenience, and efficacy of insulin delivery devices in patients with diabetes presenting to tertiary care in Peshawar.

Kashif Shehzad

Objective/Hypothesis: This comparative research was aimed at assessing simplicity, convenience, and safety of the two insulin dispensing devices so as to establish whether there were any statistically significant differences. Study Design: Comparative cross section study design was employed to conduct this study.

Materials and Methods: Tertiary care hospitals were used to collect the data on patients who were admitted to the hospitals with a validated questionnaire by healthcare professionals. The crosssectional type of study was used and the data was collected using Google Forms. For statistical significance a value of 0.05 was kept as the cut-off.

Results: Questionnaire was filled by health care professionals from 81 patients admitted in tertiary care hospitals. Among them 62 patients were using syringe/vial and 19 were using pen for their insulin injection. Although we could discern mixed findings only in our research, we could suggest future plans for further research in this study.

Conclusion/Recommendations: Our research was aimed at the determination of the relative simplicity, convenience, and safety of insulin dispensing devices. Nevertheless, we did not find any meaningful results. Perhaps more conclusive results can be achieved by using increased sample size. A qualitative study that would involve patients directly would be of great help in understanding the patient attitudes and their recommendations on how best new devices can be adapted. Also, an intervention study that includes educational sessions among patients can be used to determine the obstacles to the implementation of newer devices.

Keywords: Insulin dispensing devices, insulin vial, insulin syringes.

MAO 8:

Abstract Title: Post-operative outcomes in Opioid-free vs Opioid-based anesthetic in patients undergoing Laparoscopic cholecystectomy: A grade-assessed systematic review and meta-analysis

Zunaib Jalil

Objective/Hypothesis: Laparoscopic cholecystectomy (LC) is a common procedure for cholelithiasis and cholecystitis, and anesthetic technique significantly influences postoperative outcomes. Conventional opioid-based anesthesia (OBA) is widely used but linked to nausea, vomiting, and delayed recovery. Opioid-free anesthesia (OFA), utilizing agents such as dexmedetomidine, lidocaine, and ketamine, is emerging as a promising alternative.

Study Design: Grade assessed systemic review and meta analysis

Materials and Methods: A systematic search of PubMed, ClinicalTrials, and Cochrane databases was performed up to May 2025. Pooled results were expressed as mean difference (MD) and Risk ratios (RR) with 95% confidence intervals (CI). Meta-analyses were conducted using RevMan 5.4. Sensitivity analyses were performed. Certainty of evidence was appraised via GRADE, and risk of bias with Cochrane RoB 2.0.

Results: Five RCTs, comprising 438 patients undergoing laparoscopic cholecystectomy were evaluated. OFA demonstrated superior postoperative pain control at 6,12, and 24 hours comparedwith OBA [(MD −0.28; 95% CI −0.45 to −0.10; p = 0.002); (MD −0.62; 95% CI −0.84 to −0.40; p < 0.00001), (MD −0.34; 95% CI: −0.53 to −0.15, p = 0.0006)], respectively. The incidence of nausea and vomiting was significantly lower with OFA (RR 0.33; 95% CI: [0.20 – 0.56], p < 0.0001); vomiting (RR 0.29; 95% CI: [0.16–0.53], p < 0.0001). However, the time to awakening was longer in OFA (MD 5.64; 95% CI: [0.75–10.53], p = 0.02). No significant difference was found in overall quality of recovery (MD 13.32, 95% CI: [−10.19 - 36.83] p = 0.27).

Conclusion/Recommendations: OFA provides better pain control and reduces postoperative nausea and vomiting compared with OBA, though it prolongs awakening time. Its effect on the quality of recovery remains uncertain, highlighting the need for further large-scale trials

Keywords: Opioid free anesthesia, opioid based anesthesia, post-operative pain, quality of recovery

MAO 9:

Abstract Title: FACTORS ASSOCIATED WITH FUNCTIONAL IMPAIRMENT IN SCHIZOPHRENIA.

AMER ABBAS

Objective/Hypothesis: Objective: To determine the factors associated with functional impairment in schizophrenia.

Study Design: It is a descriptive cross-sectional study,

Materials and Methods: It is a descriptive cross-sectional study, that was carried out at the department of Psychiatry Hayatabad Medical Complex, Peshawar. The study stared on 11 November 2022 and lasted till 6th June 2024. A total of 115 patients suffering from schizophrenia presenting to the outdoor patient department (OPD) were included through purposive sampling technique. Informed consent was taken in each case. Interview were conducted in a comfortable setting ensuring privacy of the patient. Those suffering from psychiatric comorbidities such as mental retardation or those who refuse to give informed consent were excluded from this study. Diagnosis was made according to Diagnostic and statistical Manual of mental Disorders (DSM-V). Symptom severity was assessed using Brief psychiatric rating scale (BPRS) Whereas functional impairment was assessed using global assessment of functioning (GAF) scale. Demographic dataand illness related data were recorded on a semi structured proforma. Mean plus standard deviation was calculated for continuous variables whereas frequencies were calculated for categorical variables. Data was analyzed using SPSS 20. Factor correlation was done through regression analysis.

Results: In this study, mean age of patients was 39.7 with standard deviation of 20.04. 33.9% (n = 39) of the patients were female and 66.1% (n 76) were male. 57.14% suffered from single manic episode. In 32.2% (n = 37) duration of illness was up to 6 months, in 16.5% (n =19) duration of illness was up to a year, 16.5% (n =19) duration of illness was up to 5 years and in 34.9% (n=40) suffered from schizophrenia for more than 5 years. 10.4%(n= 12) of patients were admitted once in hospital due to severity of illness, 8.7% were admitted twice, 18.3 % were admitted thrice and 24.3%(n 28) had 4 or more hospital admissions . On the other hand 38.4% (n 44) of schizophrenia patients were never admitted. Mean score of Brief psychiatric rating scale (BPRS) was 93.7 with standard deviation of 42.47. The mean score of Global assessment of functioning (GAF) was 59.3 with standard deviation of 20.5. Regression analysis showed significant correlation between lower score of GAF showing functional impairment with higher BPRS score, increased number of hospital admissions and prolonged duration of illness.

Conclusion/Recommendations: This study shows that Functional impairment in schizophrenia is associated with factors such as young age, delay in start of treatment, prolonged duration of illness and severe symptoms. Severity of illness is indicated by a high

score on the BPRS scale, prolonged duration of illness and repeated admissions. Functional impairment is a very important prognostic factor. Therefore, to improve outcomes in these cases, it is important to reduce functional impairment by starting effective treatment early and ensuring compliance. This will not only reduce the severity of symptoms but also lead to early remission, decreasing the need for repeated hospitalization.

Keywords: Schizophrenia, functional impairment, brief psychiatric rating scale, Global assessment of functioning, drug compliance, Diagnostic and statistical Manual of mental Disorders (DSM-V).

MAO 10:

Abstract Title: DEPRESSION AMONG PATIENTS WITH SUBSTANCE USE DISORDER IN A REHABILITATION PSYCHIATRY UNIT: A STUDY FROM KHYBER TEACHING HOSPITAL, PESHAWAR

Muhammad Mujtaba

Objective/Hypothesis: To determine the frequency of depression among patients admitted for substance abuse detoxification at the psychiatry department of Khyber Teaching Hospital, Peshawar

Study Design: cross-sectional

Materials and Methods: This descriptive cross-sectional study was conducted in the Department of Psychiatry at Khyber Teaching Hospital from 29th November 2020 to 29th May 2021.137 patients were observed, in our study. Patients were subjected to detailed history and clinical examination. All the patients were subjected to detailed interviews using the Hamilton Depression Rating Scale in a calm environment to detect depression. All the observations were recorded in the presence of an expert psychiatrist fellow of CPSP (with a minimum of five years of experience). All above-mentioned information including name, age, and address was recorded on a pre-designed Proforma by the trainee. Care was taken during the extraction of information from all patients to avoid responder bias. Responder bias was avoided by using a structured, validated questionnairewith neutral wording, training data collectors to ensure impartiality, and conducting interviews in a private setting to encourage honest responses.

Results: Our study shows that among 137 patients, the mean age was 30 years with a standard deviation ± 10.05. 133(97%) patients were male and 4(3%) patients had female. 97(1%) patients had depression.

Conclusion/Recommendations: Our study concludes that the frequency of depression was 71% among patients admitted for substance abuse detoxification at the psychiatry department of Khyber Teaching Hospital, Peshawar.

Keywords: depression, substance abuse detoxification.

MAO 11:

Abstract Title: Seeing Beyond the Lumen: IVUS Guided Optimization of Coronary Stenting in High Risk Lesions- A Restrospective

Dr. Alina Batool

Study Objective/Hypothesis: This retrospective study evaluates the role of Intravascular Ultrasound (IVUS) in optimizing coronary stenting in high-risk lesions. Specifically, it sought to compare procedural outcomes and long-term complications between IVUS-guided and angiography-guided Percutaneous Coronary Interventions (PCI).

Study Design: Retrospective Cohort Study

Materials and Methods: A total of 100 patients were included in this retrospective study conducted between January 2024 and December 2024. Of these, 50 patients underwent IVUSguided PCI and 50 underwent angiography-guided PCI. Demographic data, procedural outcomes, and long-term follow-up data on Major Adverse Cardiovascular Events (MACE) were collected. Statistical analysis was performed using a chi-square test to evaluate the difference in procedural success between the two groups.

Results: The mean age of patients was 60.4 ± 10.5 years, with 48% male and 52% female. The procedural success rate was significantly higher in the IVUS-guided group at 86.0% compared to 79.0% in the angiography-guided group ($p = 0.026$). The MACE rate was lower in the IVUS group (5%) compared to the angiography group (10%), with a statistically significant difference ($p = 0.045$). No significant correlation was found between age and stenosis degree.

Conclusion/Recommendations: IVUS-guided PCI significantly improves procedural success and reduces long-term complications compared to angiography-guided PCI. The study supports the use of IVUS as an essential tool for optimizing stent deployment in high-risk coronary lesions.

Keywords: IVUS, coronary stenting, high-risk lesions, PCI, procedural outcomes.

MAO 12:

Abstract Title: ASSESSMENT OF KNOWLEDGE OF RADIOLOGISTS ABOUT ARTIFICIAL INTELLIGENCE IN DIAGNOSTIC RADIOLOGY

Dr. Mahnoor Rehman Khan

Objective/Hypothesis: This study aimed to assess current knowledge of radiologists about the application of AI in radiology and evaluate radiologists' perception of the impact of AI in radiology practice.

Study Design: Cross sectional study

Materials and Methods: A cross-sectional study was conducted in the main hospitals of Peshawar from 8th August 2024 to 8th November 2024. An online questionnaire was designed using Google Form software to assess the knowledge of AI in diagnostic radiology of three groups: (i) first- to fourth-year trainees in radiology programs; (ii) Radiologists and Radiology fellows; and (iii) Radiology consultants. About 200 radiologists are currently working in different hospitals in Peshawar. Estimating the anticipated frequency of participation to be 50% and an absolute precision of 5% sample size of 130 was calculated. 130 responses were completed. Statistical analysis was done using SPSS software.

Results: A total of 130 Radiologists completed the questionnaire. About 32% were consultant radiologists, 11% were radiology fellows, and 58% were radiology residents. Twenty (20) % of the radiologists were currently using AI software, of which 13 were from government hospitals and 5 from private hospitals. 56.9% had a positive attitude towards the integration of AI in radiology. A significant association was found between current position (resident, radiology fellow, or consultant) and attitude toward AI integration ($\chi^2 = 14.884$, $p = 0.005$). Significant associations were found between perceived benefits and both current position ($\chi^2 = 14.392$, $p = 0.026$) and place of work ($\chi^2 = 29.667$, $p = 0.003$). Both current position ($\chi^2 = 21.177$, $p = 0.007$) and place of work ($\chi^2 = 39.835$, $p = 0.001$) showed significant associations with perceived challenges.

Conclusion/Recommendations: In conclusion, this study illustrates that while radiology professionals are largely open to adopting AI, several barriers need to be addressed for its successful integration. These include the need for comprehensive training programs, greater access to AI tools, and the establishment of ethical and legal guidelines for AI implementation. By addressing these challenges, healthcare organizations can ensure that radiologists are equipped with the knowledge and tools necessary to harness the full potential of AI, ultimately improving patient care and clinical outcomes.

Keywords: Artificial intelligence; Diagnostic radiology; Medical imaging; Machine learning.

2. **Surgery and Allied**

SAO 1:

Abstract Title: Comparative outcomes of surgical vs. non-surgical management of small renal masses: A systematic review and meta-analysis.

DR ABDUL HASEEB

Objective/Hypothesis: This systematic review and meta-analysis aim to compare oncologic and functional outcomes between surgical and non-surgical management of SRMs, thereby aiding clinicians in optimizing patient-specific treatment strategies Study Design: Systematic review and meta analysis.

Study Design: Systematic review and meta analysis

Materials and Methods: This PRISMA-compliant systematic review (PROSPERO: CRD420250656039) evaluated surgical (partial/radical nephrectomy) versus non-surgical (thermal ablation, RFA, cryoablation, active surveillance) management of small renal masses (<4) A comprehensive search of PubMed, Embase, Cochrane, Web of Science, and Scopus was conducted for studies published before March 1, 2025. Eligible RCTs, cohort, and case-control studies were included; primary outcomes were overall survival, cancer specific survival, and perioperative complications, with data independently extracted and bias assessed.

Results: No significant differences were observed between partial nephrectomy (PN) and nonsurgical approaches (radiofrequency ablation [RFA], cryoablation) in terms of cancer-specific survival (HR=2.76, 95% CI: 1.93–3.94, P=0.45, I^2=0%) or recurrence-free survival (HR=1.67, 95% CI: 0.69–4.05, P=0.26, I^2=0%), overall survival (HR=2.53, 95% CI: 1.87–3.43, P=0.00001, I^2=71%), Early Clavien Dindo grade 3–4 complications (RR=0.80, 95% CI: 0.43–1.48, P=0.47) and early mortality (grade 5) (RR=1.32, 95% CI: 0.97–1.80, P=0.08). The renal function outcomes favored PN: at 3 months, eGFR change showed a significant difference (mean difference = 4.99 mL/min/1.73 m^2, P=0.00001); at 6 months, the difference was not statistically significant (P=0.16). The hospital stay duration was comparable (mean difference = 0.37 days, P=0.20, I^2=80%), with high heterogeneity across studies.

Conclusion/Recommendations: Partial nephrectomy and non-surgical options show comparable oncologic and perioperative outcomes for small renal masses, with partial nephrectomy offering better short-term renal function. Treatment should be individualized based on patient risk profiles.

Keywords: Small renal masses, Active Surveillance, Partial Nephrectomy, Cancer

SAO 2:

Abstract Title: Comparative study of Robotic vs Conventional minimally invasive Esophagectomy

Dr Nasir Ali Shah

Objective/Hypothesis: Comparative study of Robotic vs Conventional minimally invasive Esophagectomy Study

Design: Systematic Review/Metanalysis

Materials and Methods: A PRISMA-compliant systematic review and meta-analysis was conducted on randomized controlled trials and propensity score-matched cohort studies comparing RAMIE with cMIE (January 2013–August 26, 2025). Searches were performed in PubMed, Embase, the Cochrane Library, and Web of Science. Continuous outcomes were pooled as mean differences (MD) and dichotomous outcomes as risk ratios (RR) using random-effects models, with heterogeneity assessed using I^2. Risk of bias was evaluated using RoB-2 for randomized trials and the Newcastle–Ottawa Scale for cohort studies.

Results: Twenty-five studies involving approximately 8,900 patients (RAMIE ≈ 4,200; cMIE ≈ 4,700) were included. RAMIE was associated with a longer total operative time (MD 38.91 minutes, 95% CI 16.05–61.76; $p = 0.0008$; $I^2 = 97\%$), although thoracic operative time alone did not differsignificantly (MD 16.18 minutes, 95% CI −2.46 to 34.82; $p = 0.09$; $I^2 = 94\%$). Estimated blood loss was slightly lower in RAMIE (MD −12.73 mL, 95% CI −25.25 to −0.21; $p = 0.05$; $I^2 = 86\%$). RAMIE yielded a higher total lymph node harvest (MD 2.01 nodes, 95% CI 1.05–2.96; $p < 0.001$; $I^2 = 57\%$), particularly along the left recurrent laryngeal nerve (MD 0.60, 95% CI 0.13–1.08; $p = 0.01$), whereas right-sided lymph node retrieval was similar. Early mortality was comparable between approaches, including in-hospital mortality (RR 0.76, 95% CI 0.42–1.39; $p = 0.38$; $I^2 = 0\%$) and 90-day mortality (RR 0.97, 95% CI 0.53–1.77; $p = 0.91$; $I^2 = 0\%$). Overall postoperative complications were similar (RR 0.90, 95% CI 0.79–1.02; $p = 0.09$), with trends toward fewer pulmonary complications (RR 0.88, 95% CI 0.76–1.02; $p = 0.10$) and lower recurrent laryngeal nerve palsy (RR 0.79, 95% CI 0.62–1.00; $p = 0.05$). Length of hospital stay was shorter with RAMIE (MD −1.28 days, 95% CI −2.26 to −0.34; $p = 0.01$; $I^2 = 84\%$), whereas ICU stay was longer (MD 2.68 days, 95% CI 0.51–4.84; $p = 0.02$; $I^2 = 98\%$). Publication bias signals identified for thoracic operative time and length of stay were attenuated following sensitivity analysis.

Conclusion/Recommendations: Both RAMIE and cMIE are safe and effective approaches to esophagectomy. RAMIE is associated with longer operative duration but improved lymph-node harvest, reduced intraoperative blood loss, and a shorter overall hospital stay, with comparable early mortality and major complication rates. These findings support individualized, patientcentered procedural selection based on institutional expertise and surgeon learning curve.

Keywords: Robotic surgery, Minimally invasive esophagectomy, Esophageal cancer, Postoperative outcomes, Meta-analysis

SAO 3:

Abstract Title: Clinicodemographics profile, histopathological spectrum and post operative outcomes of brain tumor patients: A prospective analysis from a tertiary care center

Dr Sher Ali

Objective/Hypothesis: To analyze the clinicodemographic characteristics, histopathology report and postoperative outcomes of patients undergoing surgery for brain tumors.

Study Design: Prospective Observational study

Materials and Methods: This prospective observational study was conducted in neurosurgery department Lady Reading Hospital Peshawar from 1st January 2024 to 25 November 2025. Detailed data were collected using a pre-designed proforma. All those patients who has brain tumor and managed surgically were included in the study. Patients clinical, demographical data were collected. Patients post op histopathology report and outcomes were were assessed 2 weeks after surgery.

Results: This study shows that brain tumor most commonly occur in female between age 20 to 50 yrs. Most common site is sellar/suprasellar and frontal lobe.38% of brain tumor occur in left side, 32% left side and 28% in midline.The most common tumor type is glioma, GBM and Meningioma.81.7% of patient improved after surgery, 8% were same as pre operatively and 11% ofpatient deteriorated after surgery. Post OP mortality was 11%. 51% of patients have satisfactory POST OP Scan.

Conclusion/Recommendations: Overall, this study highlights the importance of clinicodemographic factors and histopathological characteristics in influencing postoperative outcomes of brain tumor patients. Early diagnosis, accurate histopathological classification, and timely surgical intervention play a critical role in improving patient outcomes. The findings contribute valuable regional data and may help in optimizing the management strategies for brain tumor patients in tertiary care settings.

Keywords: Clinicodemogrphics profile, Histopathology, Post operative outcomes, Brain tumor

SAO 4:

Abstract Title: Diagnostic Performance of the Infrascanner 2000 Hemorrhage in Traumatic Brain Injury Patients in Pakistan

Ahmad Reshad Payenda

Objective/Hypothesis: : To evaluate the diagnostic performance of the Infrascanner 2000 compared with CT in detecting intracranial hemorrhage among TBI patients in a tertiary care hospital in Pakistan.

Study Design: This was a prospective, multicenter observational diagnostic accuracy study in which patients with traumatic brain injury were consecutively enrolled and underwent Infrascanner examination followed by non-contrast CT scan as the reference standard to evaluate the diagnostic performance of the device.

Materials and Methods: A prospective observational study was conducted in 141 patients with mild, moderate, or severe TBI presenting to the emergency department. All patients underwent Infrascanner examination followed by non-contrast CT, considered the gold standard. Sensitivity, specificity, predictive values, likelihood ratios, and overall accuracy were calculated. Concordance in lesion laterality was assessed, and results were reported in accordance with STARD guidelines.

Results: CT confirmed hemorrhage in 114 of 141 patients (88.6%). The Infrascanner detected ICH with a sensitivity of 91.2%, specificity of 52.9%, positive predictive value of 93.4%, negative predictive value of 45.0%, and overall accuracy of 86.6%. The positive likelihood ratio was 1.94 and negative likelihood ratio 0.17. True positives were primarily patients with superficial hematomas, while false negatives were associated with small or deep lesions. False positives were often attributable to extracranial injuries.

Conclusion/Recommendations: The Infrascanner demonstrated good sensitivity but modest specificity for ICH detection in this Pakistani cohort. Its performance aligns with published international series, supporting its role as a rapid triage adjunct, particularly in resource-limited settings where CT access is delayed. However, it should not replace CT imaging. Further multicenter studies in South Asia, including prehospital contexts, are warranted to refine its role in clinical decision-making.

Keywords: Traumatic brain injury; Intracranial hemorrhage; Infrascanner; Near-infrared spectroscopy; Diagnostic accuracy; Pakistan

SAO 5:

Abstract Title: Impacts of multidisciplinary team meetings in management of Central Nervous System Tumors: A Single-Center Retrospective Analysis from tertiary care center in Peshawar

Adnan Khan

Objective/Hypothesis: This study aims to evaluate how Multidisciplinary Team (MDT) consensus alters surgical and oncological management decisions for complex central nervous system tumors. Furthermore, it seeks to assess the impact of these coordinated MDT interventions on patient functional outcomes and survival protocols in a resource-limited tertiary care setting.

Study Design: Retrospective study

Materials and Methods: A retrospective review of a prospectively maintained neuro-oncology MDT database was conducted. The cohort included 72 patients surgically managed for CNS lesions. Data regarding patient demographics, histopathology, WHO tumor grading, surgical extent, and MDT outcomes were analyzed using descriptive statistics and Chi-square testing to identify management trends and correlations.

Results: The patient cohort (mean age 34.3 years, range 1–79) demonstrated a diverse pathological spectrum. Histopathological analysis identified Glioblastoma (19.6%) and Ependymoma (15.2%) as the most common primary tumors. Among graded tumors, there was a significant burden of high-

grade disease, with 72.8% classified as WHO Grade 3 or 4. Surgically, subtotal resection (STR) was the predominant intervention, performed in 68.1% of cases. Following multidisciplinary review, primary recommendations included further imaging/evaluation (50.0%), conservative management (19.4%), and combined adjuvant chemoradiation (13.9%). Statistical analysis revealed no significant association between WHO tumor grade and final MDT treatment decisions ($p=0.423$).

Conclusion/Recommendations: This study highlights a high prevalence of aggressive, high-grade neuroepithelial tumors within the study population. The predominance of subtotal resections likely contributes to the MDT's reliance on extensive post-operative imaging and surveillance prior to initiating adjuvant therapy. Furthermore, the lack of statistical correlation between tumor grade and MDT decisions underscores that neuro-oncological planning is not solely grade-dependent but relies on a multifaceted assessment of functional status, residual disease burden, and molecular profiling to tailor individualized care.

Keywords: Central Nervous System Tumors; Multidisciplinary Team (MDT); Neuro-oncology; Glioblastoma; Neurosurgery; Subtotal Resection.

SAO 6:

Abstract Title: Comparison of Propofol-Based Total Intravenous anesthetics Versus Volatile anesthetics on Postoperative Cognitive Function and Delirium After Adult Cardiac Surgery: An Updated Systematic Review and Meta-Analysis

Haris Akbar

Objective/Hypothesis: Postoperative neurocognitive disorders including postoperative delirium (POD) and postoperative cognitive dysfunction (POCD) are frequent postoperative conditions related to cardiac surgery. It is uncertain whether the use of propofol-based total intravenous anaesthesia (TIVA) or volatile anaesthetics influences the occurrence of these conditions. This metaanalysis assessed the association between anaesthetic technique and postoperative neurocognitive outcomes in patients undergoing cardiac surgery.

Study Design: Systematic Review and meta-analysis

Materials and Methods: This systematic review and meta-analysis was conducted according to PRISMA guidelines. Electronic searches were performed on PubMed, Google Scholar, and Cochrane Central from inception to August 6, 2025. RCTs with adult patients (>18) undergoing cardiac surgery in which propofol-based TIVA was compared to volatile anesthetics were included. Thestudies that involved non-cardiac surgery or paediatric population, or mixed modes of anaesthetics were eliminated. Three authors independently screened and excluded studies that did not fulfil the inclusion criteria.

Results: This meta-analysis included 17 RCTs involving 7,057 patients. No significant difference was found between anaesthetic approaches in POCD (RR 0.98, 95% CI 0.621.54) and POD (RR 0.98, 95% CI 0.811.18). No difference in cognitive performance at 24 hours tested with the Mini-Mental State Examination. MoCA scores were lower in the propofol group as compared to volatile group at 24 hours. No differences in the secondary outcomes i-e. ICU stay, hospital stay.

Conclusion/Recommendations: TIVA using propofol and volatile anaesthetics have an equivalent postoperative neurocognitive and clinical outcome in adults undergoing cardiac surgery. The existing evidence is not able to show a clinically significant benefit of each of the anaesthetic approaches.

Keywords: Postoperative cognitive dysfunction (POCD), Postoperative delirium (POD), Cardiac surgery, Propofol / Total intravenous anesthesia (TIVA), Volatile anesthesia (VA)

SAO 7:

Abstract Title: INTRAOPERATIVE OUTCOMES OF LAPAROSCOPIC ADRENALECTOMY: A PROSPECTIVE STUDY AT KHYBER TEACHING HOSPITAL.

Momina Mustafa

Objective/Hypothesis: To evaluate intraoperative outcomes of laparoscopic adrenalectomy at a tertiary care hospital.

Study Design: Prospective study

Materials and Methods: This prospective study included 117 adult patients undergoing elective laparoscopic adrenalectomy at Khyber Teaching Hospital from August 2022 to June 2025. Preoperative preparation included optimization of blood pressure for patients with catecholaminesecreting tumors. Intraoperative outcomes recorded included operative time, intraoperative blood loss, need for transfusion, intraoperative complications, and hemodynamic stability, including episodes of hypertensive emergency and management. Mean age and standard deviation were calculated. Standardized laparoscopic surgical techniques were applied for all patients.

Results: The mean age of patients was 49.5 ± 10.4 years (range 21–75). Mean operative time was 125 ± 25 minutes, and mean intraoperative blood loss was 150 ± 80 mL. Only 5% (≈6/117) of patients required intraoperative blood transfusion. Intraoperative complications were rare, occurring in 3% (≈4/117) of patients. Hypertensive crises occurred in 4 patients (≈3.4%), all of which were successfully managed intraoperatively with short-acting intravenous antihypertensive agents. All procedures were completed laparoscopically with no conversions to open surgery.

Conclusion/Recommendations: Laparoscopic adrenalectomy is safe and effective, demonstrating low intraoperative blood loss, minimal transfusion requirements, and very low complication rates. With proper preoperative preparation and intraoperative management, hypertensive emergencies can be safely controlled, even in hormonally active adrenal tumors. These results support the continued preference for laparoscopic adrenalectomy as the standard approach for suitable adrenal masses.

Keywords: Laparoscopic adrenalectomy, intraoperative outcomes, hypertensive crisis

SAO 8:

Abstract Title: EARLY CLINICAL OUTCOMES FOLLOWING LAPAROSCOPIC PYLORUS-PRESERVING VERSUS CLASSICAL PANCREATICODUODENECTOMY: A PROSPECTIVE STUDY

Momina Mustafa

Objective/Hypothesis: To compare early postoperative outcomes between LPPPD and LCPD.

Study Design: Prospective cohort

Materials and Methods: This prospective cohort study included 40 patients undergoing elective laparoscopic pancreaticoduodenectomy at a tertiary center. Patients were grouped into LPPPD (n = 22) and LCPD (n = 18). Standard ISGPS definitions were used for postoperative pancreatic fistula (POPF) and delayed gastric emptying (DGE). All patients were followed for 90 days.

Results: A total of 40 patients were included, with 22 undergoing laparoscopic pylorus-preserving pancreaticoduodenectomy (LPPPD) and 18 undergoing laparoscopic classical pancreaticoduodenectomy (LCPD). Participant ages ranged from 37 to 68 years, with a mean age of 52.4 ± 7.6 years, and age distribution was comparable between groups. Major postoperative complications (Clavien–Dindo ≥ III) were slightly lower in LPPPD (13%) compared with LCPD (17%). Gastrojejunostomy/anastomotic leak and delayed gastric emptying were also higher in LPPPD (leak12%, DGE 18% vs LCPD leak 5%, DGE 11%). However, LPPPD demonstrated advantages including lower mean intraoperative blood loss (≈260 mL vs 390 mL), shorter median hospital stays (7 vs 9 days), and fewer dumping symptoms (9% vs 22%). Mortality was low and comparable in both groups (LPPPD 4.5% vs LCPD 5.5%), and R0 resection rates were similar.

Conclusion/Recommendations: Both laparoscopic approaches are safe and feasible. Although LPPPD has slightly higher rates of pancreatic fistula and delayed gastric emptying, it offers advantages in terms of reduced blood loss, shorter hospitalization, and fewer postoperative dumping symptoms. Overall complication rates and mortality were low and comparable, and oncologic outcomes were similar. These findings suggest that LPPPD may be considered a slightly better minimally invasive option for selected patients, balancing physiological benefits with acceptable postoperative risks.

Keywords: Laparoscopic pylorus preserving pancreaticoduodenectomy, Classical pancreaticoduodenectomy, pancreatic leak/fistula

SAO 9:

Abstract Title: Comparative Effectiveness of Del-Nido Cardioplegia in Pediatrics vs. Adult Open Cardiac Surgery for Congenital and Acquired Valvular, Coronary, and Structural cardiac lesions: A Multi-Center Study in Peshawar

SHAHZAD KHAN

Objective/Hypothesis: Comparative Effectiveness of Del-Nido Cardioplegia in Pediatrics vs. Adult Open Cardiac Surgery for Congenital and Acquired Valvular, Coronary, and Structural cardiac lesions: A Multi-Center Study in Peshawar

Study Design: prospective, comparative study

Materials and Methods: Methods: This prospective, comparative study enrolled 500 patients undergoing cardiac surgery with DNC across three centers in Peshawar, Pakistan, from December 2023 to November 2025. Patients were divided equally into pediatric (≤18 years, n=250) and adult (>18 years, n=250) groups. DNC was administered at 20 mL/kg (maximum 1000 mL) in a 1:4 blood:crystalloid ratio. Primary outcomes included spontaneous sinus rhythm return, defibrillation requirements, and postoperative complications. Statistical analysis used Welch's t-test, chi-square, and Fisher's exact tests with significance set at $p<0.05$.

Results: Results: Baseline characteristics confirmed distinct populations: pediatric patients predominantly had congenital lesions (96.4% vs. 12.8% in adults, $p<0.001$), while adults had more acquired disease (87.2%) and comorbidities (62.0% vs. 7.2%, $p<0.001$). DNC provided comparable cardioplegic arrest durations (pediatrics: 52±12 min vs. adults: 50±13 min, $p=0.20$). Spontaneous sinus rhythm return exceeded 95% in both groups (96.0% vs. 95.6%, $p=0.80$), and defibrillation requirements were similarly low (4.0% vs. 4.4%, $p=0.80$). Postoperative outcomes showed no significant differences: mechanical ventilation (210±45 vs. 215±50 min, $p=0.15$), inotropic support (30±8 vs. 32±9 hours, $p=0.06$), ICU stay (3.8±1.3 vs. 4.0±1.4 days, $p=0.18$). Complication rates— including atrial fibrillation (6.0% vs. 8.0%, $p=0.39$), acute kidney injury (4.0% vs. 4.8%, $p=0.83$), and stroke (1.2% vs. 1.6%, $p=1.00$)—were comparable. In-hospital mortality was low (1.2% vs. 1.6%, $p=0.78$), with 0% 30-day mortality in both groups.

Conclusion/Recommendations: Conclusions: Del Nido cardioplegia provides equivalent myocardial protection and postoperative outcomes in both pediatric and adult populations despite differing baseline characteristics and surgical indications. The comparable rates of spontaneous rhythm recovery, low complication rates, and excellent short-term survival support DNC as a safe and effective cardioplegic strategy across the age spectrum. Its favorable profile and costeffectiveness make it particularly suitable for resource-constrained settings.

Keywords: DEL NIDO CARDIOPLEGIA, MYOCARDIAL PROTECTION

SAO 10:

Abstract Title: Effectiveness of pre-operative pulmonary rehabilitation (PREHAB) in reducing postoperative pulmonary complications (PPCs) following mitral valve replacement (MVR) surgery: A Randomized Control Trial

SHAHZAD KHAN

Objective/Hypothesis: Objectives: 1.To investigate the effectiveness of pre-operative pulmonary rehabilitation (PREHAB) in reducing postoperative pulmonary complications (PPCs) following mitral valve replacement (MVR) surgery. 2.To find out cost-effectiveness of preoperative rehabilitation protocols in high risk cardiac surgeries

Study Design: single blinded randomized control trial

Materials and Methods: Methods: This single blinded randomized control trial was conducted at 03 cardiac centers of peshawar,kpk,pakistan that is Lady Reading Hospital, MTI, Peshawar, Afridi Medical complex peshawar and North west general hosptal, peshawar,Pakistan, from February 2024 to August 2025 (over a time span of 18 months). Sample size was collected using effect size from mean differences through G power. A total of 120 participants were randomly assigned into two equal groups. Adults between the ages of 18 and 80 who had an elective MVR operation scheduledand showed one or more risk factors for PPCs, such as COPD, reduced lung function, or a history of pneumonia, made up the study population. The intervention group received a 4-week individualized pre-operative pulmonary rehabilitation program. The incidence of PPCs within 30 days after surgery was the study's main outcome measure.

Results: Results: The mean age for both the experimental and control groups was approximately 60 years (Experimental: Mean ± SD = 60.2 ± 5.1; Control: Mean ± SD = 59.8 ± 4.9). Gender distribution was balanced, with 42 (70%) males in experimental group and 18 (30%) females while in control group there were 39(65%) males and 21 (35%) females. Frequency of Post-operative pneumonia, atelectasis, pleural effusion, need for mechanical ventilation in experimental group was (10%), (8%), (5%0 and (2%) while in control group was measured as (37%), (22%), (24%) and (18%).

Conclusion/Recommendations: Conclusion: Our study concludes that pre-operative pulmonary rehabilitation is effective in reducing postoperative pulmonary complications after mitral valve replacement surgery. The results of this study support the inclusion of structured pre-operative respiratory exercises in the routine protocol for patients having mitral valve replacement.

Keywords: Keywords: Mitral valve replacement surgery, Postoperative pulmonary complications, Pre-operative pulmonary rehabilitation, Randomized control trial, Reduction in PPCs.

SAO 11:

Abstract Title: Trifecta Analysis of Open Nephron Sparing Surgery in Renal Tumors

SHEHZAD FAIZ

Objective/Hypothesis: To study the trifecta outcomes of open nephron sparing surgery in patients with T1a, T1b and selected cases of T2 renal tumors

Study Design: Descriptive Cross-sectional study

Materials and Methods: This study was conducted in the Department of Urology, at the Institute of Kidney Diseases (IKD), Peshawar, from January 2022 till June 2024. A sample size of 137 patients, was collected via non-probability convenient sampling technique. Patients with T1a, T1b and Selected cases of T2 diseases (solitary functioning kidney) were included in the study. Patients with high complexity RENAL Nephrometry Score were excluded. Data analysis was performed using IBM SPSS version 20.0

Results: The mean age of the patients were 46.8 ± 10.6 years, with predominantly male patients (73.72%). The mean tumor size, duration of ischemia, duration of surgery, and length of stay were 6.5 ± 3.1cm, 21.8 ± 6.5 minutes, 115 ± 12.5 minutes, and 4.1 ± 1.2 days, respectively. Tumor freesurgical margins were achieved in 94.89% of the patients. Significant complications (Clavien-Dindo grade 2 or above) were seen in 10.94 %.

Conclusion/Recommendations: The Trifecta analysis concludes that Open Nephron sparing surgery is an effective and safe treatment modality in the management of renal tumors.

Keywords: Nephron Sparing Surgery, Renal Tumors, Trifecta Analysis

3. Paediatrics

PO 1:

Abstract Title: Frequency of Hypocalcemia in Children Aged Less Than Two Years Presenting with First Afebrile Seizure

Habiba Noor

Objective/Hypothesis: To determine the frequency of hypocalcemia in young children with first afebrile seizure

Study Design: Cross-sectional study

Materials and Methods: This descriptive cross-sectional study was carried out in the Department of Pediatrics at Hayatabad Medical Complex, Peshawar for the duration of six months, from August 2024 to January 2025. A total of 130 children between 2 and 24 months of age who presented with their first afebrile seizure were included through consecutive sampling after obtaining ethical approval. Clinical information was recorded, and a venous blood sample (2 mL) was taken to check serum calcium. Hypocalcemia was defined as a calcium level below 8 mg/dL. Data were entered and analyzed using SPSS version 22. Quantitative variables were summarized as mean and standard deviation, while categorical variables were presented as frequencies and percentages. Chi-square or Fisher's exact test was used where appropriate, with a p-value of 0.05 taken as significant.

Results: A high proportion of the children, about 68.5%, were found to have hypocalcemia. The trend was more noticeable in younger infants and those belonging to lower socioeconomic households. Children who had seizures lasting longer than a few minutes also showed a greater likelihood of having low calcium levels. Although not all associations reached statistical significance, the overall pattern suggested that calcium deficiency may play an important role in the presentation of afebrile seizures in this age group.

Conclusion/Recommendations: The study shows that hypocalcemia is quite common among children under two years who come with a first episode of afebrile seizure. Checking serum calcium at the time of presentation may help in early management, reduce the duration or severity of seizures, and prevent unnecessary investigations, particularly in hospitals where resources are limited.

Keywords: Hypocalcemia, Afebrile Seizure, Serum Calcium, Infants, Pediatric Emergency, Electrolyte Imbalance, Seizure Evaluation

PO 2:

Abstract Title: FREQUENCY OF IMMEDIATE COMPLICATIONS OF MENINGITIS IN PEDIATRIC POPULATION OF DISTRICT PESHAWAR: A CROSS-SECTIONAL STUDY

Muhammad Mujtaba

Objective/Hypothesis: To find the frequency of immediate complications of meningitis in the pediatric population

Study Design: Cross-sectional

Materials and Methods: A cross-sectional study was conducted in a hospital in the district of Peshawar from 1st September 2022 to 31st August 2023. The sampling technique was a nonprobability convenience sampling technique. The sample size was 197 which was calculated by using the EPI calculator. Patients with a diagnosis of meningitis as well as those who agreed to participate in our study were included. A suspected case of meningitis and those Parents who did not provide consent for their children were excluded from our research. A structured questionnaire was used which was filled out by the authors themselves after reviewing all those reports and examinations. For statistical analysis, we use SPSS v.20 was used.

Results: The total number of patients was 197. The mean age, weight, and occipital frontal circumference of our patient were 2.84±2.33 years, 13.06±7.65 kilograms, and 47.51±5.54 centimeters. Male were 107(54.3%) while female were 90(45.7%). 58.88% of the 197 cases of meningitis that were confirmed had an immediate complication which Hydrocephalus has been recorded as one of the most prevalent complications, accounting for 19.8%.

Conclusion/Recommendations: the highest incidence of complications was observed among patients diagnosed with tuberculosis meningitis, as 90% of TBM developed complications. Among the complications assessed in our study, overall hydrocephalus emerged as the most frequently reported one.

Keywords: Meningitis, Meningitis complication, CNS infection, Pediatric population

PO 3:

Abstract Title: CASE REPORT: CONGENITAL INSENSITIVITY TO PAIN WITHOUT ANHIDROSIS

Muhammad Mujtaba

Objective/Hypothesis: to educate healthcare professionals by detailing unique or unusual patient cases

Study Design: Case report

Materials and Methods: Congenital Insensitivity to Pain (CIP) is a condition that manifests from birth and impairs the ability to perceive physical pain. Individuals affected by CIP are entirely devoid of the ability to feel pain in any part of their body. While they still experience discriminative touch, these patients cannot perceive sensations that would typically be described as painful by individuals with a normally functioning sensory and autonomic nervous system. Furthermore, they are unable to discern extreme temperatures, whether hot or cold. CIP is classified as a type of peripheral neuropathy because it impacts the peripheral nervous system. This intricate network connects the brain and spinal cord to muscles and sensory cells responsible for detecting varioussensations, including touch, smell, and pain. In this report, we present a case of congenital insensitivity to pain in a 6-year-old boy.

Results: I was referred a six-year-old boy from Nangarhar Province in Afghanistan. His parents shared their concerns about his apparent inability to experience pain, a phenomenon they first noticed when he was a baby. Remarkably, he did not cry when receiving injections during infancy. As he began teething, the situation became even more apparent. He would repeatedly bite his tongue, leading to bleeding and eventually causing the tip of his tongue to take on a forked appearance, as shown in Figure 1. Additionally, the child frequently suffered injuries to his toes and fingers, some of which had occurred repeatedly. The extent of his condition became evident when he lost several upper front incisor teeth and canines, as depicted in Figure 1. Remarkably, the boy had also fractured his right femur at some point, yet he never complained of pain. It was only when his parents noticed his limping that they took him to a doctor, and an X-ray revealed the fracture, as illustrated in Figure 2A and Figure 2B. As a result of his insensitivity to pain, the patient endured additional injuries, including burns, as he couldn't differentiate extreme temperatures from normal ones. This led to repeated burn injuries on his toes and hands, as evidenced in Figure 3, showcasing his indifference to thermal stimuli. Some studies have suggested that the ipsilateral insular cortex may serve as the primary thermal receiving center. Furthermore, the patient had a history of diarrhea and was anemic. Fortunately, aside from subnormal thermal reception, all other sensory modalities appeared normal. Additionally, a

thorough physical examination ruled out accompanying disorders such as anhidrosis. This process allowed us to rule out other conditions similar to congenital insensitivity to pain, including those within the HSAN (hereditary sensory and autonomic neuropathy) groups. Based on his medical history, we arrived at the diagnosis of CIP.

Conclusion/Recommendations: Congenital insensitivity to pain is a complicated condition that involves a lot more than just a lack of pain sensitivity. The systemic effects lead to unique patterns of soft tissue presentations, joint degeneration, and reduced bone and soft tissue repair, as well as an elevated risk of infection. In this syndrome, upper limb symptoms are less frequent than lower limb ones. Early intervention in cases of digital ulceration by debridement and soft tissue cover may prevent amputation. HSANs are currently untreated. However, it is crucial to stop patients from self-mutilating. The removal of sharp tooth surfaces caused by grinding (enameloplasty), using mouth guards tongue guards, or other devices to avoid harm to the tongue.

Keywords: CIP, SCN9A, Peripheral Nervous system, chromosome 2q24.3.

PO 4:

Abstract Title: Frequency of Neonatal Jaundice in Polycythemic Infants Admitted to the Intensive Care Unit: A Cross-Sectional Study

Muhammad Mujtaba

Objective/Hypothesis: To determine the frequency of neonatal jaundice among polycythemic infants admitted to the neonatal intensive care unit (NICU).

Study Design: cross-sectional study

Materials and Methods: A cross-sectional study was conducted at the Department of Pediatrics, Hayatabad Medical Complex, Peshawar, from July 2020 to January 2021. A non-probability consecutive sampling technique was used, and a total of 167 neonates were enrolled based on WHO sample size calculation. Inclusion criteria were neonates less than one month old, gestational age between 31–40 weeks, weight 1500–4600 g, and diagnosed with polycythemia. Neonates with blood disorders, syndromic features, or jaundice developing after three weeks were excluded. Data were collected through structured questionnaires, clinical assessment, and laboratory investigations. Analysis was done using SPSS v20.

Results: Among 167 neonates, 108 (65.7%) were male and 59 (35.3%) female, with a mean age of 14.5 ± 7.22 days. Neonatal jaundice was present in 78 (46.7%) infants, and 45 (26.9%) developed kernicterus. Jaundice was significantly associated with male gender, neonatal age 22 g/dL), elevated serum bilirubin, obstetric complications, birth asphyxia, and cephalohematoma ($p < 0.05$), but not with gestational age.

Conclusion/Recommendations: Nearly half of the polycythemic neonates admitted to the NICU developed jaundice, with a considerable proportion progressing to kernicterus. Male gender, higher hemoglobin concentration, and perinatal complications emerged as major risk factors. These findings highlight the importance of early screening and timely intervention in polycythemic infants to prevent severe neurological outcomes.

Keywords: Bilirubin, Birth asphyxia, Kernicterus, Neonatal jaundice, Polycythemia.

PO 5:

Abstract Title: A Case of Fulminant Hepatitis Induced by Measles in an 8-Month Old Female

Muhammad Mujtaba

Objective/Hypothesis: The main aim of this case report is to enhance the literature on the fulfillment of hepatitis induced by measles

Study Design: Case report

Materials and Methods: An 8-month-old female, known case of protein-calorie malnutrition with a clinical diagnosis of measles. Later on, she developed complications for which multiple labs were performed, confirming the diagnosis of fulminant hepatitis induced by measles.

Results: .

Conclusion/Recommendations: A child exhibiting irritability, nausea, and rapid onset of bruising should undergo a comprehensive panel of investigations for timely diagnosis and management.

Keywords: Fulminant Hepatitis, Measles, Protein-Calorie Malnutrition

PO 6:

Effectiveness of Educational Interventions on Maternal Knowledge, Perceptions, and Satisfaction Regarding Neonatal Danger Signs: A Mixed-Method Three-Arm Randomized Controlled Trial

Mohammad Danial

Objective/Hypothesis: 1. To compare mothers' knowledge of neonatal danger signs across audiovisual, verbal counselling, and pamphlet-based education. 2. To assess maternal satisfaction with the intervention. 3. To evaluate and compare knowledge improvement from baseline to 28 days post-intervention. 4. To explore mothers' perceptions of the assigned education method at 28 days

Study Design: Mixed-method RCT

Materials and Methods: A mixed method RCT was conducted among 246 mothers, admitted to tertiary healthcare hospitals in Peshawar from Dec 2025 to March 2026. Participants were allocated by block randomization to audiovisual education, doctor-led verbal counselling or pamphlet-based education (control). Knowledge was assessed at baseline and after 28 days using validated questionnaires, alongside assessment of maternal satisfaction (CSQ-8). A qualitative phenomenological component involved 20 interviews analyzed using Braun and Clarke's thematic analysis, while SPSS Version- 26 used for data entry, descriptive and inferential statistics.

Results: Mean scores of baseline knowledge of primary danger signs across Video, Verbal and Pamphlet were 25.07 ± 10.14, 26.5 ± 10.6, 26.1 ± 11.5. Knowledge after intervention was 43.8 ± 6.4, 45.65 ± 5.2, 43.8 ± 6.4 which represents a knowledge increase of 37.5%, 38.3%, 35.4%. Mean scores of baseline knowledge of secondary danger signs were 20 ± 8.5, 20.24 ± 8.5, 20.1 ± 8.2, while after intervention was 29.3 ± 6.3, 31.7 ± 4.3, 30 ± 6.8 depicting a knowledge increase of 29.06%, 35.8%, 30.9%. The satisfaction scores were 30 ± 2.7, 30.1 ± 2.4, 30.4 ± 2.1. Thematic analysis gave 65 codes translating to 6 themes.

Conclusion/Recommendations: A significant improvement in maternal knowledge of neonatal danger signs, high satisfaction and audio-visual with verbal counselling highlighted as the effective method.

Keywords: Neonatal danger signs, maternal knowledge, health education

4. Gynaecology and Obstetrics

OGO 1:

Abstract Title: ROLE OF SHOCK INDEX IN PREDICTING ADVERSE MATERNAL OUTCOME AT TERM

Dr Rukhsana Karim

Objective/Hypothesis: To determine the role of shock index (SI) in predicting adverse maternal at term.

Study Design: Cross sectional analytical

Materials and Methods: Materials and Methods: This study was conducted in the department of Obstetrics and Gynaecology, Hayatabad Medical Complex, Peshawar from 1st June 2025- 1st Dec 2025, after ethical approval. Two hundred and sixty-three patients were included in the study through non probability convenient sampling technique. Women admitted in labor room at term (37-42completed weeks) were included in the study. While patients having period of gestation less than 37 weeks, those already in shock, having previous scar, antepartum hemorrhage, multiple gestation, cardiac/hypertensive disorder were excluded from the study. Shock Index was calculated as a ratio between heart rate and systolic blood pressure. Patients were then divided into two groups. Group A included patients having shock index ≥ 0.9 and group B were having SI < 0.9. Allthe patients were then followed for primary post-partum hemorrhage, maternal ICU admission, mode of delivery and maternal mortality. Data was analyzed using SPSS version 22. Frequencies/percentages were used for categorical variables while mean and standard deviation for continuous variables. Chi square was used to compare the maternal outcome in two groups. P value< 0.05 was considered statistically significant.

Results: 263 patients were included in the study. Mean age of the patients was 28.05± 6.26. Mean SI was 0.78 ±0.172 with a range of 0.52- 2.5. Most of the patients were multigravida. Mean POG was 38.93± 1.23. There was no statistically significant association between shock index and mode of delivery/ ICU admission. But there was statistically significant association between shock index (>0.9) and postpartum hemorrhage. No maternal death was recorded wit in 24 hours of delivery.

Conclusion/Recommendations: Shock index ≥ 0.9 on admission had statistically significant association with postpartum haemorrhage (p value =0.034).

Keywords: Shock index, adverse maternal outcome, postpartum haemorrhage

OGO 2:

Abstract Title: Women with postpartum hemorrhage at a tertiary care hospital: frequency, risk factors, and clinical outcomes

Dr. Rubina Akhtar

Objective/Hypothesis: To evaluate the maternal outcomes associated with PPH by quantifying its incidence, identifying the risk factors and analyzing primary etiological causes. S

tudy Design: Cross-sectional Study

Materials and Methods: This cross-sectional study was conducted in the Department of Obstetrics and Gynecology, MTI HMC, Peshawar, from January 2023 to December 2023. The study population included all women diagnosed with PPH following vaginal birth in the labour room or referred for primary PPH. Patients with a known history of bleeding disorders or those on anticoagulant therapy, such as warfarin, were excluded. Data collection involved a systematic review of labour ward birth registers to identify patients diagnosed with PPH. Data analysis was performed using SPSS version 26.

Results were presented as frequencies, percentages, and means, as appropriate. Results: In our study, the frequency of PPH was 3.61% (n=225). The mean age of the women was 29.16 years (SD ±5.43). In terms of parity, 47.56% of PPH cases occurred in primiparas, 35.11% in multiparas, and 17.33% in grand multipara. The leading causes of PPH included uterine atony at76.00%, retained products of conception (RPOCs) at 12.00%, and trauma (perineal and vaginal tears) at 10.22%. Among the risk factors, prolonged labour (14.67%), nulliparity (12.89%), anemia (10.22%), previous history of PPH (9.33%), and abnormal placentation (8.89%) were the most prominent.

Conclusion/Recommendations: The highest risk factors identified include prolonged labour, nulliparity, anemia, and a history of PPH. These findings emphasize the necessity for targeted interventions in order to reduce the burden of PPH.

Keywords: Postpartum hemorrhage, Clinical outcomes, Uterine atony

OGO 3:

Abstract Title: EFFECTIVENESS OF MISOPROSTOL COMBINED WITH FOLEY CATHETER DURING THE SECOND TRIMESTER FOR TERMINATION OF PREGNANCY

Tayyaba Tahir

Objective/Hypothesis: Objective: To determine the effectiveness of misoprostol combined with Foley catheter for second-trimester termination of pregnancy.

Study Design: Descriptive cross-sectional study.

Materials and Methods: This descriptive study was conducted at the Department of Obstetrics and Gynaecology, Lady Reading Hospital, Peshawar, over six months. A total of 139 women aged 15–45 years with 13–24 weeks of gestation were enrolled consecutively, excluding those with trauma, bleeding disorders, or prostaglandin hypersensitivity. After informed consent, all participants received a Foley catheter (balloon inflated to 30 mL) and 200 µg of misoprostol in the posterior fornix, repeated every six hours. Effectiveness was defined as complete expulsion of products of conception with no residual on ultrasonography within 20 hours.

Results: The mean age of participants was 29.47 ± 4.62 years, with a mean BMI of 26.69 ± 3.26 kg/m². Most women were aged 18–30 years (53.2%) and multigravida (77.7%). Overall, the combined regimen was effective in 126 women (90.6%), with 13 cases (9.4%) showing treatment failure. Effectiveness was consistent across age, BMI, residence, parity, and gestational age groups, with no statistically significant associations (all $p > 0.05$).

Conclusion/Recommendations: Misoprostol combined with Foley catheter is a highly effective method for second-trimester termination of pregnancy, demonstrating consistent success across diverse demographic and obstetric subgroups.

Recommendations: This single-center, descriptive study without a control group limits generalizability and comparative conclusions. The sample size may be insufficient for detecting subgroup differences, and all procedures were performed by a single experienced clinician, which may affect applicability. Follow-up was limited to 20 hours, so longer-term outcomes were not assessed.

Keywords: Keywords: misoprostol, foley catheter, induction, second trimester.

OGO 4:

Abstract Title: CALIBRATED DRAPES: GAME CHANGER FOR PPH

Nasreen Kishwar

Objective/Hypothesis: To evaluate the effectiveness of calibrated blood collection drapes in improving detection of postpartum hemorrhage and reducing maternal morbidity and the need for blood transfusion.

Study Design: Prospective observational analytical study

Materials and Methods: A prospective observational analytical study was conducted over six months at a tertiary care hospital. A total of 200 women undergoing vaginal or cesarean delivery were enrolled (minimum calculated sample size = 182). Postpartum blood loss was assessed using calibrated drapes alongside routine visual estimation. Maternal outcomes, including PPH detection, severe PPH, blood transfusion requirement, and PPH-related morbidity, were recorded. Data were analyzed using SPSS v26 with $p < 0.05$ considered statistically significant.

Results: Calibrated drapes detected a significantly higher number of PPH cases compared to visual estimation (31% vs 19%, $p < 0.001$), identifying additional clinically relevant cases. Severe PPH detection was also improved. Early recognition enabled timely intervention, resulting in asignificant reduction in blood transfusion requirement (9% vs 18%, $p = 0.01$) and lower maternal morbidity indicators.

Conclusion/Recommendations: Calibrated blood collection drapes significantly improve detection of postpartum hemorrhage and contribute to reduced maternal morbidity and transfusion requirements. Routine use represents a simple, cost-effective strategy to enhance maternal safety.

Keywords: Postpartum hemorrhage, calibrated drapes, blood loss measurement, maternal morbidity, blood transfusion

OGO 5 :

Title: Relationship between immediate postpartum umbilical cord pH, fetal distress and neonatal outcome

Dr. Hafiza Marwa Farooq

Objective/Hypothesis: To determine relationship between immediate postpartum umbilical cord pH, fetal distress and neonatal outcome

Study Design: Descriptive cross-sectional

Materials and Methods: This descriptive cross-sectional study was conducted in the department of Gynaecology, Lady Reading Hospital Peshawar, Pakistan. This study included 27 full-term pregnant women who had abnormal CTG and for whom caesarean was decided as mode of delivery. After birth of baby ,a portion of the umbilical cord was double clamped, and one ml of blood was drawn from the umbilical artery. After cord blood sampling, pH analysis was done. APGAR score of all the newborn was evaluated at one and five minutes after birth

Results: Out of 27, most patients 13 (48.14%) were in the age group 20-25 years,11 (40.74%) to 26-30 years and 3 (11.11%) belonged to 31-35 years of age group. CTG abnormalities were severe bradycardia, late deccelerations and persistent variable deccelerations with loss of baseline variability. Of all delivered babies, 21 (77%) babies had birth weight3.5 kg birth weight. 20 (74.07%) had acidosis (pH <7.2) at the time of birth, of which one had severe hypoxemia and acidosis with pH 6.85. APGAR score at 0 minutes showed a strong positive correlation (r=0.818, p= <0.001) with cord pH, while APGAR at five minutes was also strongly correlated (r= 773, p=<0.001). Of all babies 18(66.66%) with PH less than 7.2 were admitted in NICU while only 2 babies with PH more than 7.2 were admitted. (p value= 0.005).

Conclusion/Recommendations: Low umbilical cord pH values of babies born by cesarean section (for fetal distress) are strongly correlated with low APGAR score at birth and higher rates of NICU admission.

Keywords: Fetal Distress, Hypoxia, Acidemia. Umbilical cord pH, Neonatal outcome

OGO 6:

Title: Role of Familial Predisposition and Moderate Exercise in Oxidative Stress and Antioxidant Capacity in Prediabetes

Dr Zubia Shah

Objective/Hypothesis: Explore the effects of moderate-intensity physical activity on glycemic control and antioxidant capacity in individuals at risk of developing diabetes, regardless of their family history

Study Design: Experimental study design using purposive sampling

Materials and Methods: The experimental investigation was conducted at the Physiology Department of the Institute of Basic Medical Sciences in Peshawar, Pakistan, affiliated with

Khyber Medical University. The study involved a cohort of 50 adult participants diagnosed with prediabetes. Of these, 25 individuals had a positive family history of diabetes, while the remaining 25 had a negative family history. Prediabetes was diagnosed based on glycated hemoglobin levels between 5.7-6.4% and impaired fasting glucose levels from 100-125 mg/dL. Anthropometric measurements and biochemical tests were performed before and after the exercise session. Participants engaged in moderate exercise for 30 minutes, reaching a maximum heart rate of 70% ± 5%, five days a week for eight weeks. Their exercise was monitored using a pedometer. An enzyme-linked immunosorbent assay (ELISA) was used to measure individual and total antioxidant levels.

Results: The fasting blood glucose ($P<0.001$).

Conclusion/Recommendations: Engaging in moderate physical activity for 8 weeks resulted in a notable decrease in individual antioxidant levels. Additionally, there was a slight increase in overall antioxidant capacity and uric acid.

Keywords: Antioxidants, Diabetes Mellitus, Family history, Physical activity, Prediabetes

OGO6:

Long-Term Outcomes and Quality of Life (QoL) Following Mid-Urethral Sling Surgery at AKU: A 14-Year Review in the Context of the Mesh Debate."

Anum Malik

Objective: To evaluate the long-term safety and effectiveness of mid-urethral sling (MUS) surgery for stress urinary incontinence (SUI), with a specific focus on mesh-related complications in a South Asian population where such data are scarce.

Materials and Methods: A retrospective review was conducted of 408 women who underwent TVT and TOT at Aga Khan University Hospital, Karachi, between 2009 and 2023. The primary outcome was to assess MUS safety through postoperative complications, while secondary outcomes included objective cure, overall success rates, and QoL improvement measured by UDI-6 and IIQ-7. Data were analyzed using SPSS v19, with logistic regression performed to identify predictors of treatment failure.

Results: At 12 and 30 months, objective cure rates were 94.85% and 94.36%, and overall success rates were 97.8% and 96.62%, respectively. QoL scores improved significantly at follow-up ($p < 0.05$). Mesh-related complications were infrequent, decreasing from 3.9% at 1 month to 1.2% at 30 months. In our cohort, increasing age and postmenopausal status were the only significant predictors of objective failure after MUS, while pelvic organ prolapse was the sole predictor of poorer subjective cure at both 12 and 30 months.

Conclusion: Mid-urethral sling surgery is a safe and effective treatment for stress urinary incontinence, demonstrating high objective cure and overall success rates with sustained quality-of-life improvement. Mesh-related complications were uncommon and declined over time. Age, menopausal status, and pelvic organ prolapse were identified as key predictors of failure, highlighting the importance of patient-specific factors in determining long-term outcomes

Keywords: Stress urinary incontinence (SUI)

5. Basic Sciences

BSO 1:

Abstract Title:

Abstract Title: Anatomical variation in the foramen rotundum and its clinical significance

Qurat-ul-Ain

Objective/Hypothesis: To evaluate anatomical variations in foramen rotundum of middle cranial fossa

Study Design: Cross-sectional study

Materials and Methods: A cross-sectional study was conducted in the Anatomy Departments of three different medical colleges of Peshawar, over a period of four weeks from 1st March 2025 till 30th March 2025. Before starting the study, ethical approval was obtained from IREB committee of HMC. A total of 35 dried human skulls were studied according to inclusion and exclusion criteria. The age and gender of the skulls were unknown. Each skull was checked for the presence of the foramen rotundum on both right and left sides. The transverse diameters were measured using a digital vernier caliper with a least count of 0.01mm. Any duplication, absence, or abnormal shapes were also noted.

Results: This study evaluated bilateral dimensional and morphological variations across 35 paired samples by measuring their sizes (in millimetres) and categorizing shapes on the right and leftsides. Measurements ranged from 2.02 mm to 9.54 mm on the right side and 2.13 mm to 8.53 mm on the left side. We ran Paired sample T- Test and found a statistical difference with a p- value of 0.05 on both sides. Majority of samples exhibited symmetrical shapes, predominantly round or oval, with bilateral round shape. The mean measurement ± standard deviation was 4.93 ± 2.07 mm on the right side and 4.25 ± 2.31 mm on the left side. The average paired difference between right and left measurements was 0.68 ± 1.30 mm, indicating a small but variable side-to-side difference.

Conclusion/Recommendations: The present analysis demonstrates measurable bilateral differences in both size and shape among the sampled pairs. Although the mean measurements on the right side were slightly larger than those on the left side, the observed variability, reflected in the standard deviations and paired differences, highlights significant individual asymmetry. Morphological classifications showed predominant bilateral symmetry in shape, yet several instances revealed discordant forms, particularly involving irregular and pinhole morphologies. These findings will be valuable for surgeons in planning a safer intervention while approaching intracranial procedures involving trigeminal nerve.

Keywords: Foramen rotundum, trigeminal nerve, sphenoid bone, base of skull

BSO 2:

Abstract Title:

Exploring Pakistani Undergraduate Medical Students, Preferences: A Comparative Analysis of Problem Based Learning vs Lecture Based Learning

Dr. Urooj Ali

Objective/Hypothesis: To investigate and compare the preferences of Pakistani undergraduate medical students regarding problem based learning and lecture based learning.

Study Design: This was a cross-sectional comparative analysis employed with online Google Docs questionnaire distributed to Pakistani medical students via social media platforms. Utilizing nonprobability convenience sampling technique, participants were enrolled in data collection.

Materials and Methods: This cross-sectional comparative analysis was implemented by learners of Khyber Girls Medical College Peshawar, KPK and was approved by the Institutional Review Board. Data were accumulated from Pakistani undergraduate medical students from 1June 2022 to 5 August 2022 of all four provinces of Pakistan. The sample consists of undergraduate medical students currently studying in any medical college in Pakistan. Non probability convenient sampling technique was used to select 200 participants through Raosoft sample size calculator while considering a population size of 10000, a 95% confidence interval and a 5% margin of error.Data collection was conducted utilizing an online Google Forms structured questionnaire. The Google form link was sent to medical students through WhatsApp, Facebook, and G mail. Participants provided consent and were assured of anonymity and confidentiality of their participation. No incentives were offered to take part in this study. The statistical analysis was executed using SPSS software version 21.

Results: Among the 200 respondents, 29% were from final year, while 8%,27.5%,26.5% and 9% were from fourth, third, second and first professional, respectively. Problem based learning was favored by 68% learners and only 32% students like lecture based learning. It was found that 71% participants expressed the view that PBL resulted in an enhanced understanding of lecture content. As reported by 73.5% of participants, PBL leads to improvement of habit of self-learning. Furthermore, 78% students claimed that PBL leads to better analytical approach toward problem solving. In terms of pre-session preparation 65.5% and in terms of developing competencies 82.5% students claimed the superiority of PBL over LBL. Regarding the accessibility of resources for facilitating PBL sessions, only 49% of students expressed satisfaction, while 58.5% of the respondents admitted the availability of trained demonstrators for LBL sessions.

Conclusion/Recommendations: The results of this study demonstrate that PBL outperforms LBL in enhancing student competencies. Moreover, these findings indicate a strong preference among students for PBL over LBL. However, it is crucial to address the pressing need for enhancing resources dedicated to conducting PBL sessions.

Keywords: Problem based learning, Lecture based learning, Teaching, Medical students

BSO 3:

Abstract Title: Role of Turmeric (Curcuma Longa) in Protection Against Methotrexate Induced Sinusoidal Congestion in the Liver of Albino Mice

Dr. Farah Deeba

Objective/Hypothesis: To observe the defensive effects of Turmeric on Methotrexate induced hepatic toxicity in mice.

Study Design: An experimental laboratory study, using Simple random sampling

Materials and Methods: Twenty-eight adult male albino mice were used in this experiment; they were split into four groups: experimental Groups B, C, and D, and control Group A. Four mice were included in Group A, the control group, and eight mice in Group B, C, and D. Group Adid not receive any medication Group B received 400 mg/kg of oral Turmeric extract per day for 14 days. On day seven, Group C received an intraperitoneal injection of Methotrexate (40 mg/kg). Group D received 400 mg/kg of Turmeric extract orally every day for 7 days prior to the injection of Methotrexate. On day 7, the injection of 40 mg/kg of Methotrexate was administered intraperitoneally. After that, Group D received 400 mg/kg of Turmeric extract orally every day for an additional 7 days, following the administration of injection Methotrexate. On day 14, every animalwas dissected, and the liver was examined under a light microscope to study histological parameters.

Results: The sinusoids appeared normal in the liver sections of group A(control) according to the histological analysis. Group B, which received treatment with Turmeric, did not exhibit any discernible histological alterations. Upon examining the liver tissue of Group C (the group receiving Methotrexate), severe histological alterations were observed, which included sinusoidal congestion. Group D (Methotrexate + Turmeric group) demonstrated a significant reduction in sinusoidal congestion

Conclusion/Recommendations: This study concluded Turmeric (Curcuma longa) protected liver tissue against methotrexate induced damage.

Keywords: Antioxidant, Liver damage, Methotrexate, Sinusoidal congestion,Turmeric

BSO 4:

Abstract Title: Institutional Determinants of Workplace Violence Against Healthcare Workers: Evidence from Public and Private Hospitals in Pakistan

Wajahat Usman

Objective/Hypothesis: This paper addresses three core questions. First, what is the prevalence of physical and verbal violence against healthcare workers in Pakistan's hospital sector, and how does it differ between public and private hospitals? Second, which institutional factors—security provision, reporting infrastructure, training—predict violence exposure and reporting behaviour? Third, what are the measurable welfare consequences of victimization for affected staff, and through what pathways do institutional deficits translate into violence risk?

Study Design: Peshawar, capital of Khyber Pakhtunkhwa province, hosts major tertiary hospitals. The public hospital sector is characterised by severe overcrowding, chronic understaffing, and limited security. Private hospitals operate under competitive market conditions with stronger management accountability. We study six hospitals: three public (Khyber Teaching Hospital [KTH], Lady Reading Hospital [LRH], Hayatabad Medical Complex [HMC]) and three private (Rehman Medical Institute [RMI], Northwest School of Medicine [NWSM], Pakistan Institute of Medical Sciences [PIMS]). We conducted a cross-sectional survey over four months. Eligible respondents were healthcare staff—doctors, nurses, paramedics/technicians, administrative staff, and security staff—currently employed at selected hospitals. Sampling was stratified by professional group within each hospital, yielding N = 768 (128 per hospital). The survey covered: (i) demographics andemployment; (ii) physical attack and verbal abuse in the prior 12 months; (iii) perpetrator identity and triggers; (iv) reporting behaviour and institutional procedures; (v) personal consequences; and (vi) perceptions of institutional quality

Materials and Methods: - Theoretical Framework with Basic Environment Settings - Logistic Regression - Outcomes by Institutional Differences (through mean ratios) - Path Analysis; Mediated Effects - Welfare Analysis

Results: The public-private divide is stark across all outcomes. Physical attack occurred in 53.6% of public-sector staff versus 12.2% in private ($\chi 2 = 137.8$, $p < 0.001$). Similarly, 79.7% of publichospital staff witnessed violence versus 27.1% in private hospitals. Institutional quality indicators— security, training, reporting procedures—were present in 88–89% of private hospital staff but only 10–18% of public-hospital staff. Conditional on all controls, public hospital affiliation carries OR=7.82 for physical attack and OR=9.94 for witnessed violence. Adequate security has a strong protective effect (OR=0.11 for attack). Worry level shows strong positive association with violence (OR=3.24), likely reflecting bidirectional causation. For incident reporting (Column 2), public hospital affiliation dramatically reduces reporting (OR=0.05), while adequate security increases it (OR=8.42). Public-hospital staff experience violence onset much earlier (median=4.2 months) than private-hospital staff

(median=9.8 months). The log-rank test confirms highly significant differences ($p < 0.001$). Among attacked staff, fear of work (35.0%) and reduced job satisfaction (35.4%) are substantially higher than among non-attacked staff (6.0% and 5.8%). Psychological stress is more evenly distributed (20.4% vs. 38.6%), suggesting distinct welfare profiles.

Conclusion/Recommendations: This paper documents a severe and institutionally-rooted workplace violence crisis in Pakistan's public hospital sector. Using original survey data from 768 healthcare workers across six hospitals, we establish that structural factors—hospital type, security adequacy, reporting procedures—explain virtually all variation in violence outcomes, while individual characteristics contribute no independent explanatory power. The public-private divide is absolute across all indicators: physical attack (53.6% vs. 12.2%), witnessed violence (79.7% vs. 27.1%), adequate security (10.2% vs. 89.1%). Four policy implications follow. First, mandatory violence reporting systems should be established in all public hospitals. Reporting rates increase 6.6-fold with formal procedures—a zero-cost, high-impact intervention. Second, security infrastructure investment would yield measurable reductions in worry (Spearman $\rho = -0.81$) and violence probability. Third, targeted post-incident psychological support for physically victimised staff is warranted, given distinct welfare burdens (fear of work, job disengagement). Fourth, induction programmes for junior staff should include violence response and rights awareness.

Keywords: workplace violence, healthcare workers, institutional quality, public-private hospitals, Pakistan

BSO 5:

Abstract Title: Association of vitamin D levels and vitamin D receptor gene polymorphisms in preobese and obese individuals from Pashtun ethnicity of Pakistan

Waheed Iqbal

Objective/Hypothesis: low levels of vitamin D and vitamin D receptor gene polymorphism is associated with obesity

Study Design: Observational study

Materials and Methods: This study enrolled 280 participants with pre-obesity (140) and obesity (140) as per WHO criteria. After proper consent, blood samples were withdrawn for biochemical parameters and DNA extraction followed by VDR genotypes determination through allele specific polymerase chain reaction (AS-PCR). All the analysis were done using SPSS version 22.0.

Results: VD levels were significantly lower in obese individuals (20.66 ± 5.14ng/ml) compared to pre-obese individuals (23.54 ± 5.84ng/ml) ($p = 0.002$) and were significantly associated with obesity (p-value 0.006). The VDR ApaI-AA genotypes were associated with obesity (OR = 3.091, 95% CI: 1.176–8.125, $p = 0.022$) while, the CC genotype of TaqI showed weak association (OR = 2.319, 95% CI: 1.022–5.258, $p = 0.044$). VD deficiency remained a significant predictor to obesity(OR = 3.360, 95% CI: 1.056–10.694, $p = 0.04$) after adjustments in multivariate logistic regression analysis

Conclusion/Recommendations: VD deficiency remains independent risk factors in obesity. ApaIAA genotypes were significantly associated with obesity but not TaqI.

Keywords: Genetic Polymorphism, Obesity, Single Nucleotide Polymorphism, Vitamin D deficiency, Vitamin D, Vitamin D Receptor

BSO 6:

Abstract Title: "Medical Students and Research: Assessing the Gaps in Supervision, Resources, and Competency"

Dr, Farida Ahmad

Objective/Hypothesis: Research is core component of academic curriculum of medical students at undergraduate level. More and more students have started their research project. However, many students face significant challenges while conducting research. The objective of this study is to find out the difficulties medical students face while conducting research, specifically highlighting student-centered barriers and how well can they apply their research knowledge, alongside highlighting supervisor and institutional barriers.

Study Design: descriptive cross sectional

Materials and Methods: It was a multicenter study carried out from November 2026 to January 2026 after ethical approval from Institutional research ethical board HMC int different government and private medical colleges. The study population consisted of students from second to final year. Sample size was 255. A structured, pre-tested self-administered questionnaire using a 5-point Likert scale (strongly agree to strongly disagree), was used on categories such as: supervisionrelated challenges, resource constraints, student-related challenges and understanding of research methodology. The data was analyzed using the IMB-SPSS software, version27. Categorical variables were expressed as frequencies and percentages,

Results: The data analysis revealed several student-related challenges in conducting Research .on top of the list was Lack of confidence by students to take up research project with 74.5% of the students agreeing to strongly agreeing with the statement. Second most common challenge was inadequate time to conduct research with 68.6% agreeing and strongly agreeing.while 55% of the students considered financial constraints as a challenge to conduct research. Regarding students view on lecturer's performance in teaching research 66% of the students agreed and strongly agreed that there are few lecturers who are competent in research supervision. While 62% agreed the lack of harmonized research guidelines by the lecturer. However, fewer students (20.8% agreed, 3.5% strongly agreed) believed supervisors lack basic knowledge. Regarding challenges with research supervision 56% of the students agreed on the shortage of supervisors,54% had problem meeting supervisor on time . The most commonly Resource Constraints in conducting research was limited access to journals which was reported by 57.2% of the students. Considering self-Reported difficulty in understanding and applying research process, 72% and 69% of the Students struggled with identifying research gap and selecting research design respectively. While 63% had difficulty in sampling technique and 61% reported problems with study designs selection.other problems were problems in formulation of objectives as reported by 57% and making of problem statement 59%.

Conclusion/Recommendations: The study highlights substantial student-related, supervisory, and institutional challenges in conducting research. Lack of confidence, inadequate time, and financial constraints emerged as major personal barriers, while perceived inconsistencies in supervision, limited supervisor availability, and restricted access to journals further impeded research progress. Additionally, significant difficulties were reported in core methodological competencies, particularly in identifying research gaps and selecting appropriate study designs. These findings underscore the need for structured research training, harmonized supervisory guidelines, improved mentorship capacity, and enhanced institutional resource support to strengthen students' research engagement and competence.

Keywords: research, gaps , challenges

BSO 7:

Title: Blood and Food Biomolecules: Analytical Assessment & Monitoring of Concentrations, Nutritional Values, Biological Values, with Reference to Accurate Health Implications and Disorders Risks.

Idrees Ali

Objective/Hypothesis: The primary objective of this study was to analytically assess major biomolecules (proteins, carbohydrates, and lipids) in blood and food samples through standard qualitative and quantitative biochemical assays, with focused and continuous monitoring of reaction chemistry. The study aimed to establish how reaction behavior—such as reagent interactions, color development, stability, and concentration dependence - directly influences analytical validity, nutritional interpretation, biological relevance, and health-related risk assessment. Study Design: This research adopted a comparative, laboratory-based analytical study design, emphasizing reaction chemistry–centered evaluation within routine biochemical assays. Biomolecular concentrations in blood and food samples were analyzed through replication-based testing, while reaction progression, reagent behavior, and endpoint stability were continuously observed and documented. Results were interpreted not only quantitatively but also chemically, highlighting how reaction dynamics influence outcome reliability and biological interpretation

Materials and Methods: Standard qualitative and quantitative biochemical assays were employed for the detection and estimation of proteins, carbohydrates, and lipids in blood and food samples. Sample preparation and assay execution were performed according to established biochemical protocols, with strict control of experimental variables including reagent concentration, sample volume, temperature, incubation time, and mixing conditions. Reaction chemistry monitoring was incorporated as a core analytical component throughout all assays. During macromolecule testing, reagent–sample interactions were continuously observed for reaction initiation, uniform mixing, and progression. Particular attention was given to color development patterns, ensuring gradual and proportional intensity changes consistent with expected concentration behavior. Reaction timing was carefully controlled to prevent premature or over-developed endpoints, which could lead to false or insignificant results. Reaction stability was assessed by observing color persistence, precipitation formation, turbidity, or unexpected phase changes, which may indicate incomplete reactions or reagent incompatibility. Assays showing abnormal reaction kinetics, unstable color endpoints, or inconsistent visual responses were critically evaluated and repeated to ensure chemical validity. Concentration-dependent responses were compared across replicates to confirm reproducibility and reliability. Analytical results were interpreted only after confirming acceptable reaction behavior and chemical consistency, recognizing that failure to monitor reaction chemistry may compromise assay sensitivity, specificity, and biological interpretation. Final values were compared with established biochemical reference behaviors and nutritional expectations to support meaningful health-related analysis.

Results: Biochemical assays successfully identified proteins, carbohydrates, and lipids in both blood and food samples, exhibiting clear concentration-dependent responses. Consistent and reproducible results were obtained when reaction chemistry—particularly reagent interaction, color development, and endpoint stability—was properly monitored. In contrast, inadequate reaction control resulted in unstable or inconsistent endpoints, reducing analytical significance. Comparative analysis revealed regulated biomolecular concentrations in blood samples and greater variability in food samples, reflecting differences in biological utilization and nutritional composition. Overall, reaction monitoring markedly improved result reliability and interpretive accuracy.

Conclusion/Recommendations: This study demonstrates that reliable biochemical assessment of macromolecules in blood and food samples depends not only on the selection of appropriate assays but critically on systematic reaction chemistry monitoring. Concentration-dependent variations observed between sample matrices were biologically meaningful only when reaction behavior—such as color development, stability, and kinetics—remained chemically consistent and reproducible. The findings clearly indicate that neglecting reaction monitoring can compromise analytical significance, leading to misleading interpretations of nutritional status and health-related risk indicators. By integrating reaction behavior assessment with concentration profiling, this work contributes novel insight to primitive and routine biochemical testing, transforming basic assays from purely procedural tools into chemically informed analytical methods. It is therefore recommended that routine biochemical protocols formally incorporate reaction monitoring as a standard practice and that laboratory training emphasize reaction interpretation alongside assay execution to enhance analytical reliability, educational value, and health-oriented applicability, particularly in academic and resource-limited laboratory settings.

Keywords: Biomolecules, Reaction Chemistry Monitoring, Biochemical Assays, Analytical Reliability, Nutritional Assessment, Primitive Biochemical Testing, Clinical Biochemistry

BSO 8:

Title: The cost and health impacts of ambient air pollution in Peshawar: A Mixed-method

Dr Adil Zareef

Objective/Hypothesis: This study aimed to establish the relationship between specific health outcomes in Peshawar and ambient air pollution, specifically PM2.5. The economic cost of the disease burden was quantified using the Disability-Adjusted Life Years (DALYs).

Study Design: The explanatory sequential mixed-methods design integrated the qualitative findings from the key stakeholders with the quantitative analysis of the health and air quality data.

Materials and Methods: This study used sequential mixed-method explanatory design. For quantitative component, air quality data (2022–2023) from multiple monitoring sources and hospital health data for six diseases associated to air pollution was collected. DALYs were estimated using WHO and Global Burden of Disease methods. Human Capital Approach computed the economic losses owing to disease burden. Finally, Key Informant Interviews were conducted with regulators, industry representatives, legislators, and health professionals to collect and analyze thematic qualitative data.

Results: We calculated that average PM2.5 levels, with noticeable seasonal peaks in the winter, greatly exceeded both national and WHO standards. Acute respiratory infection, ischemic heart disease, type 2 diabetes, and COPD rates were found to be strongly positively correlated with PM2.5/AQI levels. We calculated that Peshawar's overall disease burden was 99,299 DALYs due to ambient air pollution. An estimated USD 154 million (PKR 43 billion) was lost economically as a result of this burden, or nearly 2% of the district's gross state product. The majority of these health and financial losses were caused by lower respiratory infections and ischemic heart disease.

Conclusion/Recommendations: Our findings of the integrated assessment reveal that ambient air pollution in Peshawar has a substantial and preventable adverse impact on the local economy and the public health. The significant disease burden, measured in terms of Disability-Adjusted Life Years, and the associated economic costs underscore the need for a multi-sectoral policy response. A major investment in the sustainable development policy is essential to improve air quality and protect population health.

Keywords: Ambient air pollution, Disease burden, Disability-Adjusted Life Years (DALYs), monetary cost of the disease burden, stakeholders' insights on policy interventions, governance gaps, health impacts

BSO 9:

Title: DATA ANALYSIS FOR DEMOGRAPHIC TRENDS IN MALIGNANT TUMORS IN A TERTIARY CARE HOSPITAL, PESHAWAR

Dr Bakhtawar Kamal

Objective/Hypothesis: The purpose of this study was to assess age and gender-based demographic characteristics, as well as tumor distribution, among patients diagnosed with malignant tumors at a tertiary care hospital in Peshawar, Pakistan.

Study Design: retrospective cross-sectional analysis

Materials and Methods: A retrospective cross-sectional analysis was undertaken utilizing HMIS records from Hayatabad Medical Complex from 2019 to 2024. Data on 452 patients with histopathologically confirmed malignant tumors were analyzed. Descriptive statistics summarized demographic characteristics and tumor distribution. The chi-square test was used to determine associations between age groups, gender, and tumor systems, with statistical significance established at $p < 0.05$.

Results: Of the 452 cases, 38.9% were male, and 61.1% were female. Ages 30 to 44 were the most impacted (16.8%). About 48% of all malignancies occurred in the six most common tumor sites: breast (6.0%), uterus (10.6%), ovary (8.2%), cervix (7.3%), bladder (13.9%), and skin (12.2%). There was a strong correlation between age categories and gender ($\chi^2 = 32.49$, $df = 5$, $p < 0.001$), with males predominating in patients aged ≥60 years and females in reproductive and middle-aged groups. Additionally, the tumor system showed strong correlations with age group ($\chi^2 = 240.21$, $df = 55$, $p < 0.001$) and gender ($\chi^2 = 179.83$, $df = 11$, $p < 0.001$).

Conclusion/Recommendations: According to this hospital-based study, the most common malignancies are bladder, skin, and gynecological, and the burden of malignancy is higher among women and those between the ages of 30 and 44. These results offer useful baseline epidemiological information that could help with regional resource allocation, early detection tactics, and targeted cancer screening

Keywords: Cancer epidemiology, cancer staging, malignant neoplasms, Cancer Surveillance, Public Health

BSO 10:

Title: Comparative Neuroprotective Efficacy of Emodin Versus Dimethyl Fumarate in Parkinson's Disease: Nrf2-Mediated In Silico and In Vivo Study

DR SARWAT JAHAN

Objective/Hypothesis: To comparatively evaluate the neuroprotective efficacy of emodin versus dimethyl fumarate in an MPTP-induced mouse model of Parkinson's disease, with specific emphasis on Nrf2-mediated antioxidant and anti-inflammatory mechanisms.

Study Design: Experimental Study

Materials and Methods: Molecular docking was performed to assess the binding affinity of emodin toward the Nrf2 protein. Parkinsonism was induced in BALB/c mice using intraperitoneal

administration of MPTP. Animals were treated with emodin alone, emodin in combination with DMF (Nrf2 agonist), or emodin with all-trans retinoic acid (ATRA; Nrf2 antagonist). Behavioral assessments—including open-field, cylinder, pole, rotarod, and wire-hang tests—were conducted to evaluate motor and neuromuscular function. Oxidative stress, neuroinflammation, and glial activation were analyzed using Western blotting for Nrf2, HO-1, p-NF-κB, NOS-2, TNF-α, IL-1β, GFAP, IBA-1, and TLR4.

Results: In silico analysis demonstrated a strong binding interaction between emodin and Nrf2, supporting its role as a pathway activator. MPTP administration caused significant motor impairment, oxidative stress, and neuroinflammatory responses. Emodin treatment markedly improved behavioral performance, restored antioxidant defenses, and suppressed inflammatory and glial activation markers. Comparative analysis revealed that emodin exhibited neuroprotective efficacy comparable to DMF, with co-administration producing additive enhancement of Nrf2 activation and downstream targets, including HO-1. In contrast, Nrf2 antagonism significantly attenuated emodin's protective effects, confirming the pathway specificity of its action.

Conclusion/Recommendations: Emodin demonstrates potent Nrf2-dependent neuroprotective effects in experimental Parkinson's disease, with efficacy comparable to the established Nrf2 agonist dimethyl fumarate. These findings position emodin as a promising anthraquinone-based therapeutic candidate and a potential natural alternative or adjunct to existing Nrf2-targeted strategies in Parkinson's disease management.

Keywords: Emodin, Neurodegeneration, Parkinson Disease, nuclear factor erythroid 2–related factor 2, Dimethyl Fumarate

BSO 11:

Role of Familial Predisposition and Moderate Exercise in Oxidative Stress and Antioxidant Capacity in Prediabetes

Zubia Shah

Objective/Hypothesis: Explore the effects of moderate-intensity physical activity on glycemic control and antioxidant capacity in individuals at risk of developing diabetes, regardless of their family history

Study Design: Experimental study design using purposive sampling

Materials and Methods: The experimental investigation was conducted at the Physiology Department of the Institute of Basic Medical Sciences in Peshawar, Pakistan, affiliated with Khyber Medical University. The study involved a cohort of 50 adult participants diagnosed with prediabetes. Of these, 25 individuals had a positive family history of diabetes, while the remaining 25 had a negative family history. Prediabetes was diagnosed based on glycated hemoglobin levels between 5.7-6.4% and impaired fasting glucose levels from 100-125 mg/dL. Anthropometric measurements and biochemical tests were performed before and after the exercise session. Participants engaged in moderate exercise for 30 minutes, reaching a maximum heart rate of 70% ± 5%, five days a week for eight weeks. Their exercise was monitored using a pedometer. An enzyme-linked immunosorbent assay (ELISA) was used to measure individual and total antioxidant levels.

6. Students Research

SO 1:

Abstract Title: IDENTIFYING FACTORS ASSOCIATED WITH HIGH-RISK OBSTRUCTIVE SLEEP APNEA (OSA) AMONG HYPERTENSIVE PATIENTS: A CASE-CONTROL STUDY IN A TERTIARY CARE HOSPITAL IN PAKISTAN

Ihtisham Ul Haq

Objective/Hypothesis: To identify factors associated with high-risk OSA in patients with raised blood pressure attending two tertiary hospitals in Peshawar.

Study Design: Case control study.

Materials and Methods: A case-control study was conducted from 1st June to 1st September 2025, including 156 hypertensive participants recruited through consecutive sampling (78 cases; 78 controls). Cases had STOP-Bang scores ≥3 with additional criteria, while controls had scores ≤2. Data were collected using a structured questionnaire comprising sociodemographic information, clinical variables, STOP-Bang scoring, and the Hospital Anxiety and Depression Scale. Chi-square and t-tests assessed group differences, and binary followed by multivariable logistic regression identified predictors of high-risk OSA.

Results: Among 156 hypertensive patients mean age (54.3 ± 13.1 years), BMI (27.3 ± 5.4 kg/m²) and neck circumference (15.0 ± 1.5 cm) were observed to be significantly elevated among patients of high-risk OSA. Gender, BMI category, and ischemic heart disease showed significant associations. In crude regression, age, gender, BMI, neck circumference, and ischemic heart disease were significant predictors; however, after adjustment, only older age, male gender, and larger neck circumference remained independently associated with high-risk OSA.

Conclusion/Recommendations: This study concluded that older age, male gender, and increased neck circumference are strong and independent predictors of high-risk obstructive sleep apnea among hypertensive patients. The STOP-BANG questionnaire proved to be a practical and effective screening tool in this population, particularly in resource-limited settings where polysomnography is not readily available. Although body mass index and ischemic heart disease showed significant associations in unadjusted analyses, these associations were attenuated after multivariable adjustment, suggesting shared underlying metabolic and cardiovascular pathways. The high prevalence of anxiety among hypertensive patients highlights the multifaceted burden of disease in this group. Incorporating simple clinical measures, such as neck circumference and age-based risk assessment, into routine hypertension care may facilitate earlier identification of OSA and help reduce related cardiovascular complications. Further large-scale, multicenter studies

using objective diagnostic methods are recommended to validate these findings and refine screening strategies.

Keywords: Obstructive Sleep Apnea (OSA); Hypertension; STOP-BANG Questionnaire

SO 2:

Abstract Title: Ethical Perceptions of Euthanasia Among Medical and Non-Medical Undergraduate Students in Pakistan: A Qualitative Exploratory Study

Syeda Fatima Qamar

Objective/Hypothesis: This qualitative study explored the awareness, ethical perceptions, and sociocultural interpretations of euthanasia among medical and non-medical undergraduate students in Pakistan.

Study Design: An exploratory qualitative design was employed using semi-structured interviews to capture participants' personal understanding and moral reasoning. Thirty undergraduate students aged 18-24 years were recruited from medical disciplines, including Pharmacy and Allied Health Sciences, and non-medical disciplines such as Social Sciences, Business, Engineering, and Arts. Interviews were conducted face-to-face, audio-recorded with consent, and transcribed verbatim. Data was analysed using thematic analysis to identify recurring patterns and underlying meanings within participants' narratives.

Materials and Methods: An exploratory qualitative design was employed using semi-structured interviews to capture participants' personal understanding and moral reasoning. Thirtyundergraduate students aged 18-24 years were recruited from medical disciplines, including Pharmacy and Allied Health Sciences, and non-medical disciplines such as Social Sciences, Business, Engineering, and Arts. Interviews were conducted face-to-face, audio-recorded with consent, and transcribed verbatim. Data was analyzed using thematic analysis to identify recurring patterns and underlying meanings within participants' narratives.

Results: The findings revealed that most students had limited prior awareness of euthanasia, with many encountering the concept for the first time during the interview. Ethical perceptions were strongly influenced by religious beliefs, with euthanasia predominantly viewed as morally impermissible and inconsistent with the belief that life and death are governed by divine authority. Cultural norms further reinforced opposition, as euthanasia was widely regarded as a taboo subject that contradicts family values and societal expectations. Medical students demonstrated relatively greater conceptual clarity and analytical reasoning, often acknowledging patient suffering and clinical realities; however, they remained ethically conflicted and largely unwilling to support or

perform euthanasia due to religious, moral, and professional constraints. In contrast, non-medical students relied more on emotional and moral reasoning, frequently equating euthanasia with killing or wrongdoing.

Conclusion/Recommendations: Overall, the study highlights that perceptions of euthanasia among Pakistani university students are shaped more by faith, culture, and collective social values than by academic background alone. These findings emphasize the need for structured bioethics education and culturally sensitive dialogue to promote informed and balanced understanding of end-of-life issues.

Keywords: Euthanasia; Bioethics; Ethical Perceptions; Undergraduate Students; Religion and Culture; End-of-Life Care

SO3:

Abstract Title: PERCEIVED STIGMA AMONG PSYCHIATRIC AND NON-PSYCHIATRIC PATIENTS IN D.I.KHAN DIVISION: A COMPARATIVE STUDY

Muhammad Nauman

Objective/Hypothesis: To find the stigma among both psychiatric and non-psychiatric patients of D.I.Khan division (D.I.Khan, Tank and South Waziristan district) and then compare the levels of stigma experienced by these two groups.

Study Design: Cross-sectional Study

Materials and Methods: An analytical cross-sectional study was conducted, involving 393 psychiatric and 393 non-psychiatric patients from OPDs and Wards of Mufti Mehmood teaching hospital, DHQ of D.I.Khan, Tank and also private clinics. A sample of 786 patients was calculated using Rao-Soft Software. Data was collected through face-to-face interviews using a structured

questionnaire from each patient. All the questions were asked in the patient's mother-tongue (Pashto, Saraiki and Urdu). Data were analyzed using SPSS, with Chi-square tests for categorical variables and independent samples t-tests for continuous variables.

Results: Higher levels of perceived stigma was reported in psychiatric patients compared to nonpsychiatric patients. In non-psychiatric patients, those patients with tuberculosis exhibited thehighest stigma scores, even more than psychiatric patients. Notably, tuberculosis patients had a mean stigma score of 13.28, compared to 10.41 for psychiatric patients and 6.5 for general medical patients. Similarly, both psychiatric and non-psychiatric patients in wards had relatively higher stigma scores (13.78, 7.70 respectively) compared to those in OPDs (9.86, 6.40 respectively).

Conclusion/Recommendations: This study reveals significantly higher levels of stigma among psychiatric and tuberculosis patients compared to other non-psychiatric conditions. Targeted interventions are needed to reduce stigma in these groups, potentially improving treatment adherence and health outcomes.

Keywords: psychiatric patients, non-psychiatric patients, perceived stigma, tuberculosis, D.I.Khan Division

SO4:

Abstract Title: Frequency of Vitamin D deficiency in STEMI patients.

Rabia Tahir

Objective/Hypothesis: The purpose of this study is to ascertain how common Vitamin D deficiency is in STEMI patients.

Study Design: Case Control Study

Materials and Methods: From November 2024 to March 2025, this case-control study was carried out in the cardiology department of MTI, Hayatabad Medical Complex, Peshawar. 50 patients with ST-elevation myocardial infarction (STEMI) and 50 controls with unstable angina (USA) and non-STelevation myocardial infarction (NSTEMI) were included in our study. Demographic data, ECG

findings, and laboratory parameters of patients were analyzed. Serum vitamin D levels were measured using chemiluminescent electro-immunoassay (ECLIA) on a Cobas E601 analyzer.

Results: The average age of the controls was 60.16 ±13.2, while the average age of the cases was 57.28 ±11.4. In our study, overall 24(24%) patients were vitamin D deficient, of which 17(34%) were STEMI and 7(14%) were NSTEMI and USA. 58(58%) patients were insufficient, of which 30(60%) were STEMI and 28(56%) were NSTEMI and USA. Only 3(6%) of STEMI patients had standardvitamin D levels, compared to 15(30%) of NSTEMI and USA. The mean serum vitamin D levels of the STEMI group were 14.58±8.1, and those of the NSTEMI and USA group were 24.11±15.6 and 22.18±14.6, respectively.

Conclusion/Recommendations: Compared to NSTEMI and the USA, vitamin D deficiency was more prevalent in STEMI patients. Consequently, ST-elevation myocardial infarction is more likely to occur in ACS patients who are vitamin D deficient.

Keywords: Vitamin D deficiency, STEMI, Acute Coronary Syndrome

SO5:

Abstract Title: Lidocaine for Pain Control in Rib Fracture: A Systematic review and meta-analysis

Mushtaq Ahmad

Objective/Hypothesis: To assess lidocaine's effectiveness, administered through any route in comparison to standard care or placebo, in adults with traumatic rib fractures, focusing on pain score, safety outcome, and adverse events.

Study Design: Meta Analysis

Materials and Methods: Per PRISMA guidelines, this systematic review and meta-analysis of RCTs was carried out. Databases searched included PubMed, Embase, and Cochrane CENTRAL.

Pain scores (VAS/NRS), opioid use, length of hospital stay, respiratory complications, pneumonia, and adverse events were the outcomes that were measured. Risk of bias was assessed using Cochrane RoB 2.0. A Random-effects meta-analysis with I^2 statistics was used.

Results: RCTs pooled analysis showed that, regardless of its route of administration, lidocaine did not reduce pain significantly at 1, 12, or 72 hours (MD = 0.03; 95% CI: –0.30 to 0.37, hospital length of stay(MD = 1.35 days; 95% CI: –1.21 to 3.90), pulmonary complications (RR = 0.98; 95% CI: 0.741.29), pneumonia (RR = 0.74; 95% CI: 0.34–1.63), or adverse events (RR = 0.71; 95% CI: 0.15–3.43). For most outcomes, heterogeneity was low to moderate, which supports the consistency of thesefindings. Assessment for risk of bias showed two studies with low risk, two trials raised some concerns, and a high risk of bias in one trial, mainly because of missing outcome data and deviations from interventions that were intended

Conclusion/Recommendations: Current evidence does not show any noteworthy benefit of lidocaine, irrespective of its route of administration, for controlling the pain or clinical outcomes in patients having traumatic rib fractures. Further large, high-quality RCTs are required to clarify its role in this setting. Moreover, large, well-designed trials are required to explain its role, best dosing strategies, and its surgical-specific benefits.

Keywords: Lidocaine, trauma, rib fractures, pain control, randomized controlled trials, metaanalysis

SO6:

Abstract Title: Adjunctive vitamin D supplementation improves early sputum smear and culture conversion rates in patients receiving standard anti-tuberculosis therapy.

Mohammad Idrees

Objective/Hypothesis: Adjunctive vitamin D supplementation improves early sputum smear and culture conversion rates in patients receiving standard anti-tuberculosis therapy. Study Design: Systematic review and meta-analysis of randomized controlled trials (RCTs).

Materials and Methods: A comprehensive literature search was conducted across PubMed, Cochrane Library, Google Scholar, and Semantic Scholar to identify RCTs evaluating vitamin D supplementation as an adjunct to standard tuberculosis treatment. Studies including adult pulmonary or extrapulmonary TB patients were eligible. Fifteen trials were included in the

systematic review, with 11 contributing to the primary meta-analysis of 8-week sputum smear/culture conversion. Pooled risk ratios and effect sizes were calculated using fixed- or random-effects models depending on heterogeneity. Publication bias was assessed using funnel plots and Egger's regression.

Results: A total of 3,527 participants were included (1,757 intervention; 1,770 placebo). Metaanalysis of eight studies showed no significant improvement in sputum smear conversion at 8 weeks (ES = 1.03; 95% CI: 0.97–1.09; I^2 = 0%). Culture conversion across six studies also demonstrated minimal benefit (ES = 0.98; 95% CI: 0.74–1.21; I^2 = 22%). TB symptom scores showed a trend toward reduction by weeks 8–12, though results were inconsistent with high heterogeneity. Vitamin D supplementation was generally safe, with no serious adverse events directly attributable to treatment.

Conclusion/Recommendations: Adjunctive vitamin D supplementation does not significantly improve early sputum smear or culture conversion in tuberculosis patients receiving standard antiTB therapy. However, it may contribute to clinical and symptomatic improvement in some settings. Larger, well-designed trials are recommended to determine optimal dosing strategies, identify subgroups most likely to benefit (such as vitamin D–deficient patients), and assess long-term outcomes including relapse prevention and safety.

Keywords: Tuberculosis Vitamin D Supplementation Sputum Conversion Meta-analysis Adjunctive Therapy

SO7:

Abstract Title: Effectiveness of Low-Dose Combination Therapy Versus Standard Care in Reducing Symptoms Among Hypertensive Patients: A Systematic Review and Meta-Analysis

Mohammad idrees

Objective/Hypothesis: Low-dose combination (LDC) therapy of antihypertensives is more effective than placebo or standard care in reducing systolic blood pressure and achieving BP control in hypertensive patient

Study Design: Systematic review and meta-analysis of randomized controlled trials (RCTs).

Materials and Methods: Following PRISMA 2020 guidelines, we searched PubMed, Scopus, Web of Science, ClinicalTrials.gov, and CENTRAL through 23 October 2025. RCTs comparing LDC regimens (≥3 antihypertensives at ≤50% standard dose) with placebo or standard care in adults with hypertension were included. Data extraction, quality assessment (RoB-2), and analysis were conducted independently by two reviewers. Primary outcome: mean reduction in systolic BP at 412 weeks and 6–12 months. Secondary outcomes: proportion achieving BP <140/90 mmHg, adverse events. Meta-analyses were performed in RevMan 5.4 using random-effects models.

Results: Twelve studies (n=5049) were included. Short-term LDC therapy reduced systolic BP by −14.97 mmHg (95% CI −19.27, −10.68; I^2=88%) versus placebo, and by −6.18 mmHg (95% CI −7.72, −4.64; I^2=82%) versus standard care. At 6–12 months, the reduction was −6.58 mmHg (95% CI −9.27, −3.90; I^2=36%). BP control (<140/90 mmHg) was achieved in 261/423 patients on LDC versus 60/204 on placebo (RR 2.18 [1.67, 2.85]; I^2=23%). Adverse events were comparable to comparators, with slightly increased dizziness (RR 1.34 [1.02, 1.75]) but no significant differences in pedal edema, musculoskeletal complaints, or headache. Risk of bias was generally low-tomoderate.

Conclusion/Recommendations: LDC therapy is a safe and effective strategy for rapid systolic BP reduction and improved BP control in hypertensive adults. It offers a practical alternative to standard care, supporting broader implementation in clinical practice.

Keywords: Hypertension, Low-dose combination, Antihypertensive therapy, Systolic BP, Metaanalysis

SO8:

Abstract Title: Dual Antithrombotic Therapy Versus Anticoagulation Alone After Ischemic Stroke in Patients With Atrial Fibrillation and Atherosclerotic Disease: A Meta-Analysis of Efficacy and Safety

Mushtaq Ahmad

Outcomes Objective/Hypothesis: Ischemic stroke is a major global cause of death and disability, with atrial fibrillation substantially increasing stroke risk through cardioembolic mechanisms, often coexisting with atherosclerosis. While oral anticoagulants are the cornerstone of stroke prevention in atrial fibrillation, residual risk persists in patients with concomitant atherosclerotic disease. Combining antiplatelet therapy with anticoagulation has been proposed but shows conflicting benefits and consistently higher bleeding risk across studies. Therefore, we performed a systematic review and meta-analysis to evaluate the efficacy and safety of dual antithrombotic therapy versus anticoagulation alone in ischemic stroke patients with atrial fibrillation and atherosclerosis.

Study Design: Meta Analysis

Materials and Methods: This systematic review and meta-analysis was conducted in accordance with PRISMA guidelines and prospectively registered in PROSPERO. A comprehensive search of PubMed, Cochrane Library, Scopus, and Embase (from inception to January 2026) identifiedrandomized and observational studies comparing DOAC plus antiplatelet therapy versus DOAC alone in ischemic stroke patients with atrial fibrillation and atherosclerotic disease. Data extraction and risk-of-bias assessment were performed independently using RoB 2 and the Newcastle–Ottawa Scale, with evidence certainty evaluated using the GRADE approach. Pooled risk ratios were calculated using a random-effects model in RevMan, with heterogeneity, sensitivity analyses, and statistical significance appropriately assessed.

Results: Results Across Eight studies including 5,630 patients, there was no significant difference in recurrent ischemic stroke between DOAC plus antiplatelet therapy and DOAC alone (RR 0.96, 95% CI 0.80–1.14; $I^2 = 20\%$). Similarly, all-cause mortality, cardiovascular mortality, myocardial infarction, composite outcomes, and intracranial bleeding did not differ significantly between treatment strategies, although heterogeneity was substantial for all-cause mortality and composite outcomes. In contrast, major bleeding occurred more frequently with combination therapy compared with DOAC monotherapy (RR 1.43, 95% CI 1.06–1.93; $I^2 = 46\%$). Overall, adding antiplatelet therapy to DOACs did not improve efficacy outcomes but was associated with an increased bleeding risk.

Conclusion/Recommendations: This meta-analysis shows that adding antiplatelet therapy to DOACs in ischemic stroke patients with atrial fibrillation and atherosclerosis does not improve stroke prevention or cardiovascular outcomes compared with DOAC monotherapy, while increasing major bleeding risk. These findings support individualized antithrombotic decision-making and highlight the need for future randomized trials to better define optimal therapy in this high-risk population.

Keywords: Keywords: Ischemic stroke, Atrial fibrillation, Atherosclerotic cardiovascular disease, Direct oral anticoagulants, Antiplatelet therapy

SO9:

Abstract Title: Probing the Perspective: A cross-sectional study on the knowledge, attitude, and practice barriers towards cervical cancer screening among women presenting to tertiary care hospitals in Peshawar, Pakistan.

Mehrosh Abid Ali

Objective/Hypothesis: The objective of this study was to evaluate the level of knowledge about cervical cancer among women attending tertiary care hospitals in Peshawar. Furthermore, it sought to assess their attitudes towards cervical cancer screening and to ascertain their willingness to undergo screening for this condition. The study additionally aimed to determine the prevalence of cervical cancer screening among these women and to identify prevalent barriers, including cultural beliefs, a lack of awareness, or the unavailability of healthcare services, which may deter women from participating in screening initiatives.

Study Design: This study employed a descriptive cross-sectional design to evaluate women's knowledge, attitudes, and practices (KAP) regarding cervical cancer screening. The cross-sectional approach was chosen to provide a snapshot of the current state of awareness and behaviour among the target population. The study was conducted in the outpatient departments (OPDs) of selected tertiary care hospitals in Peshawar, Khyber Pakhtunkhwa, Pakistan. Data collection was carried out over a period of six months, beginning in May 2024.

Materials and Methods: Six months, from May to October 2024, were allocated for the crosssectional study with a sample size of 324 women. Data were obtained from the women who reported to the outpatient department of a tertiary care hospital in Peshawar. Sociodemographic data, awareness, attitudes, and screening behaviour were obtained with a structured questionnaire. 324 women were enrolled using a non-random, convenient sampling method. Women with a history of cervical cancer were not included in the study. The data were then analysed using SPSS version 25. Descriptive statistics, chi-square tests, and inferential analyses like the Mann-Whitney U test and Spearman's correlation were used in the analysis

Results: The findings revealed alarmingly low awareness of cervical cancer: only 23.5% had heard of cervical cancer, with social media being the most common source (8%), and fewer than 10% were aware of screening methods such as the Pap smear and HPV DNA testing. Symptom and risk factor recognition were used to assess knowledge, and were well under 15% for all parameters. Knowledge scores were positively correlated with education level but not with age. Despite alarmingly low awareness levels, attitudes towards cervical cancer screening were generally favourable, with over 90% recognising cervical cancer as a significant health issue and 87.7% expressing willingness to undergo screening. However, actual screening practice was negligible;

only 4.3% of the participants had ever been screened. The most cited barriers towards screening were perceived lack of need (46.6%) and lack of awareness (38.3%), with additional deterrents including fear, embarrassment, cost, and family disapproval.

Conclusion/Recommendations: The study explains a wide knowledge-practice gap in cervical cancer prevention among women in Peshawar. While there are overwhelmingly positive screening attitudes, action is hindered by structural, informational, and sociocultural barriers. Hence, interventions in the form of public health campaigns, the integration of education with healthcare services, and policy interventions are necessary to promote informed screening behaviour and to reduce the cervical cancer burden in Pakistan.

Keywords: Cervical cancer, screening, knowledge, social awareness, attitudes, practices, Pakistan, barriers, HPV, Pap smear test, HPV vaccine.

SO10:

Title: Effectiveness of Intramuscular Ketamine as an adjunct to standard care for reducing Emergence agitation in Nasal surgery Patients

Ali Raza

Objective/Hypothesis: To examine the frequency and severity of anxiety attacks in patients having nasal surgery and to assess how well intraoperative ketamine and placebo reduced the incidence of Emergence Agitation.

Study Design: Double blinded, randomized controlled trials

Materials and Methods: This double blinded study was conducted at Bacha Khan Medical Complex in Swabi. Seventy patients undergoing nasal surgery were divided into two groups in a double-blind trial. One group received intramuscular ketamine, while the other group received saline. A standardized agitation scale measured the incidence and severity of postoperative agitation. The statistical software SPSS was used to conduct the analysis.

Results: Just 5% of patients in the ketamine group experienced EA, compared to 56.3% in the saline group ($p \leq 0.001$). The risk of getting EA was 96.7% lower in those on ketamine. Also had much less discomfort following surgery ($p < 0.001$). Additionally, they reported much less discomfort following surgery (p) There were no significant differences in postoperative nausea and vomiting across the groups.

Conclusion/Recommendations: After nasal operations, intramuscular ketamine administered after the procedure was quite successful in avoiding EA. Although total prevention of EA is difficult, risk factors can greatly lower the incidence of EA. Longer procedures, OSRP surgeries, and ASA II physical condition were the primary risk elements for EA.

Keywords: Ketamine, Postoperative Agitation, Nasal Surgery, emergence agitation

SO11:

Title: Association of Ear Creases with Ischemic Heart Disease: A Matched Case–Control Study in Peshawar, Pakistan

Dr Abdul Muiz

Objective/Hypothesis: To evaluate the association between different ear creases and IHD.

Study Design: Matched Case–Control Study

Materials and Methods: : In this matched case–control study at Khyber Teaching Hospital, Peshawar (June–August 2025), 150 confirmed IHD patients from the Cardiology ward were compared with 150 age- (±3 years) and gender-matched controls from other wards, after obtaining consent. DELC, helix, and preauricular creases were assessed independently by two authors, with a third senior author resolving disagreements. Data were analyzed in SPSS v26.0; $p < 0.05$ was reported significant.

Results: There were 78 males (52%) and 72 females (48%) in each of the case and control groups. The median (IQR) age of both groups was 60 (15) years. In univariate analysis, bilateral and rightsided DELC, hypertension, diabetes, and dyslipidemia were associated with IHD. In multivariate models, bilateral DELC (OR 1.69, 95% CI 1.0–2.9, $p = 0.049$) and hypertension (OR 6.08, 95% CI 3.1– 12.0, $p < 0.001$) were independently associated. Using right-sided DELC instead of bilateral DELC produced similar results (OR 1.77, 95% CI 1.0–3.1, $p = 0.048$). Unilateral and left-sided DELC were not associated with IHD. Cases had significantly greater DELC size and depth, as well as more paired and unpaired helix creases, whereas neither preauricular crease presence nor grade differed significantly.

Conclusion/Recommendations: Unilateral, especially right-sided and bilateral DELC were independently associated with IHD, whereas left-sided and preauricular creases were not. DELC dimensions and helix creases were greater among IHD cases.

Keywords: Coronary artery disease, Ear Creases, Frank’s Sign, Helix Crease, Preauricular Crease

S12:

Efficacy and Safety of Olezarsen in High-Risk Hypertriglyceridemia: A Systematic Review and Meta-Analysis with Dose–Response and Obesity Subgroup Analysis

Aizaz Anwar Khalid

Background: Severe hypertriglyceridemia is associated with increased risk of atherosclerotic cardiovascular disease and pancreatitis, with persistent residual risk despite standard therapies. Olezarsen, an antisense oligonucleotide targeting apolipoprotein C-III, represents a novel targeted treatment.

Objective: To evaluate the efficacy and safety of Olezarsen in high-risk hypertriglyceridemic patients, focusing on dose–response and obesity subgroup effects.

Methods: A systematic review and meta-analysis of randomized controlled trials was conducted according to PRISMA 2020 guidelines. Four Databases including Pubmed, Scopus, Embase and Cochrane library were searched up to March 2026. Primary outcomes included percentage change in triglycerides and ApoC-III. Secondary outcomes included lipid parameters and safety events. Subgroup analyses were performed by dose of 10 mg, 50 mg, and 80 mg and obesity status. Data were analysed using software called Revman Manager (5.4).

Results: Six RCTs were included with total of 2,203 patients (1,331 in intervention and 872 in placebo controls). At all doses, Olezarsen demonstrated a significant and clinically meaningful reduction in triglycerides (mean difference [MD] −50.04%; 95% CI −72.71 to −27.38; p<0.0001) and ApoC-III levels (MD −61.7 units; 95% CI −62.14 to −61.28; p<0.00001). Significant reductions were also observed in VLDL-C (MD −58.46 mg/dL; 95% CI −71.64 to −45.27; p<0.00001) and non–HDL-C (MD −35.03 mg/dL; 95% CI −52.16 to −17.90; p<0.0001). No significant effect was found on LDL-C (MD 10.73 mg/dL; 95% CI −21.54 to 43.01; p=0.51). Triglyceride reduction was consistent across subgroups, including obese (MD −74.18%) and non-obese patients (MD −43.80%), with no significant interaction (p=0.16). Safety analysis indicated a favourable and well-tolerated profile, with no increase in treatment-emergent adverse events (RR 1.00; 95% CI 0.96–1.05; p=0.83). Injection-site reactions were more frequent but generally mild.

Conclusions: Olezarsen significantly reduces triglycerides and ApoC-III levels and demonstrates a favourable safety profile. A clear dose–response relationship is observed, with greater lipid reductions at higher doses. Its consistent efficacy across obesity subgroups supports its potential as an effective therapy for high-risk hypertriglyceridemia.

Keywords: apoC-III inhibitor; efficacy; hypertriglyceridemia; olezarsen; safety, obesity

Section B: Poster Presentations

1. **Medicine and Allied**

MAP 1:

Abstract Title: RUSSELL'S VIPER BITE LEADING TO ACUTE KIDNEY INJURY AND COMPARTMENT SYNDROME.

Ghazala Munawar

Objective/Hypothesis: To describe the multisystem clinical manifestations and management challenges of Russell's viper envenomation complicated by acute kidney injury, compartment syndrome, and fluid overload in an adolescent patient.

Study Design: Descriptive single-center case report detailing the clinical presentation, management, and outcome of a patient with Russell's viper envenomation complicated by acute kidney injury, compartment syndrome, and fluid overload. Graphic attachments (i.e. tables, illustrations and pictures)

Materials and Methods: This descriptive case report was conducted at a tertiary care teaching hospital in Pakistan. Clinical data were obtained through detailed review of the patient's medical records, including history, physical examination findings, laboratory investigations, imaging studies, operative notes, and inpatient progress documentation. Laboratory parameters included complete blood counts, renal function tests, coagulation profiles, and serial urine output monitoring. Imagingstudies consisted of chest radiography and venous Doppler ultrasonography of the affected limb. Compartment pressure measurements were performed to assess for ongoing compartment syndrome following prior fasciotomy. Management strategies were determined through multidisciplinary consultations involving internal medicine, nephrology, orthopedic surgery, and plastic surgery teams. The patient was followed throughout hospitalization until discharge to assess clinical course and outcomes.

Results: The patient presented with confirmed compartment syndrome requiring fasciotomy, venom-induced coagulopathy, severe anemia, and acute kidney injury with a peak serum creatinine of 4.47 mg/dL. Repeat assessment did not demonstrate persistent compartment syndrome, and surgical re- exploration was successfully avoided. The clinical course was complicated by fluid overload resulting in pulmonary edema and pleural effusions, which resolved with conservative management. The fasciotomy wound developed necrosis and secondary infection, necessitating surgical debridement, negative-pressure wound therapy, and subsequent split-thickness skin grafting. Renal function improved progressively with supportive care alone, without the need for dialysis. At discharge, the patient demonstrated stable respiratory status, recovering renal function, and satisfactory wound healing. Conclusion/Recommendations: Russell's viper envenomation can result in complex multisystem involvement requiring careful clinical reassessment and coordinated multidisciplinary care. Objective evaluation following fasciotomy may allow safe deferral of unnecessary surgical reexploration. Judicious fluid management is critical in venom-associated acute kidney injury to prevent respiratory

complications. Early tertiary care referral and individualized management strategies can lead to favorable limb and systemic outcomes even in severe envenomation.

Keywords: Russell's viper; Snakebite envenomation; Acute kidney injury; Compartment syndrome; Fasciotomy; Fluid overload.

MAP 2:

Abstract Title: "Retrospective Analysis of Clinical Presentation, Radiological Findings, and Outcomes in Foreign Body Aspiration Managed by Rigid Bronchoscopy at a Tertiary Care Hospital"

Ubaid Ullah Mian

Objective/Hypothesis: This study aimed to analyze the demographic trends, clinical presentation, radiological findings, and therapeutic outcomes of foreign body aspiration (FBA) managed via rigid bronchoscopy in a patient cohort at Tertiary Care Hospital.

Study Design: Cross Sectional. Foreign body aspiration (FBA) remains a critical pediatric emergency and a significant cause of accidental mortality in children under 4 years of age. While particularly prevalent in toddlers due to their exploratory behaviors and immature airway protection reflexes, FBA also affects adults with predisposing conditions. Despite advances in bronchoscopic techniques, delayed diagnosis continues to contribute to serious complications including pneumonia, bronchiectasis, and fatal airway obstruction. This study examines a cohort of FBA cases managed via rigid bronchoscopy in a high-volume tertiary center, providing crucial insights into demographic patterns, diagnostic challenges, and therapeutic outcomes in a resource limited setting.

Materials and Methods: A retrospective study was conducted on 464 consecutive FBA cases at Khyber Teaching Hospital, Peshawar (January 2022–June 2025). Data included demographics, clinical features, radiological/bronchoscopic findings, complications, and foreign body types. Statistical analyses comprised descriptive statistics, chi-square/Fisher's exact tests, and t-tests.

Results: The cohort showed male predominance (59.91%) and peak incidence in children aged 1–3 years (50.00%). Cough was universal (100%), and wheeze (90.94%) and breathlessness (83.18%) were highly prevalent. A definitive radiological dichotomy was observed: all inorganic foreign bodies were radiopaque (31.5% of cohort), while all organic foreign bodies (68.5%, e.g., peanuts) were radiolucent, presenting with normal X-rays (49.1%) or indirect signs. Organic FBs predominated in males (OR=3.0, 95% CI[2.1–4.3], $p<0.001$). Rigid bronchoscopy was highly effective, with complications occurring in 9.8% of cases, most commonly hypoxia/bradycardia (15.2%). Younger children (2.8±1.5 years) presented more frequently with breathlessness ($p<0.001$, Cohen's $d=0.6$).

Conclusion/Recommendations: FBA primarily affects young children, with males at higher risk for organic FBs. The clear radiological divide underscores that a normal chest X-ray cannot exclude organic FBA, emphasizing the need for bronchoscopy when clinical suspicion exists.

Rigid bronchoscopy remains effective, though complications warrant vigilance. Public health measures targeting high-risk groups are recommended.

Keywords: Airway obstruction, Aspiration complications, Bronchoscopic retrieval, Foreign body aspiration, Organic foreign bodies, Pediatric airway emergency, Rigid bronchoscopy

MAP 3:

Abstract Title: The Alarming Rise of Rhino-Orbital-Cerebral Mucormycosis During the COVID-19 Pandemic: A Retrospective Study**.**

Ubaid Ullah Mian

Objective/Hypothesis: The objectives were to (1) characterize the demographic and clinical profile of ROCM; (2) evaluate surgical and medical interventions; (3) identify key prognostic factors such as diabetes, steroid use, and intracranial involvement; and (4) suggest strategies for early diagnosis and prevention.

Study Design: Retrospective Cohort

Materials and Methods: A retrospective review of 68 patients with rhino-orbital-cerebral mucormycosis (ROCM) treated at Saidu Group of teaching hospital swat KPK Pakistan, a tertiary care hospital between January 2021 and August 2024 was conducted. Data on demographics, comorbidities, COVID-19 history, clinical presentation, disease extent, surgical interventions, and outcomes were collected and analyzed.

Results: Most patients were male (61%) and aged 35–73 years. Diabetes mellitus was present in 91.17%, and 88.3% had a history of COVID-19. Common symptoms included hemifacial pain, orbital complications, and vision loss. Extensive involvement of sinuses, orbit, and intracranialstructures was common. All patients underwent surgical debridement, mainly via modified endoscopic Denker's approach (88.23%). Mortality was 32.3%, and 62% achieved disease-free status. Intracranial extension ($p<0.001$) and uncontrolled diabetes ($p=0.016$) were significant mortality predictors. Steroid use showed a non-significant trend ($p=0.12$).

Conclusion/Recommendations: COVID-19-associated mucormycosis predominantly affected diabetic males with aggressive presentations. Early diagnosis, multidisciplinary management, and strict glycemic control are critical. Future research should prioritize rapid diagnostics and improved therapies to reduce morbidity and mortality.

Keywords: COVID-19, Diabetes mellitus, Mucormycosis, ROCM, Surgical debridement.

MAP 4:

Abstract Title: DRUG USE SEVERITY AND PSYCHOLOGICAL DISTRESS AS PREDICTORS OF INTENTIONAL BURN INJURIES: EVIDENCE FROM A TERTIARY HOSPITAL COHORT IN PESHAWAR, PAKISTAN

Mr Muhammad Faaz Khan

Objective/Hypothesis: To compare drug use severity and depressive symptoms between intentional and unintentional burn patients and to assess their associations with burn intentionality.

Study Design: A six-month prospective, multi-center, analytical cross-sectional study was conducted at Khyber Teaching Hospital and Hayatabad Medical Complex, Peshawar, enrolling 150 adult burn patients (≥18 years) using a consecutive, non-probability sampling method. Data were collected within 48–72 hours of admission to ensure accurate evaluation of mental health and substance use.

Materials and Methods: Substance use severity and depressive symptoms were systematically assessed using DAST-10 and PHQ-9. Burn intentionality was rigorously determined through triangulation of patient self-report, clinician assessment, and adjudication within 48–72 hours of admission. Demographic and clinical variables were extracted from medical records to ensure data integrity. Statistical analyses included non-parametric tests, chi-square, and correlations.

Results: Intentional burns accounted for 12.7% (n=19) of cases and were associated with significantly higher drug use severity (DAST-10: $U=773.0$, $p<0.001$) and depressive symptoms (PHQ-9: $U=8.0$, $p<0.001$) than unintentional burns (87.3%, n=131). Substances including cannabis, benzodiazepines, opioids, and methamphetamines were disproportionately represented. Drug use severity correlated positively with depression ($\rho=0.270$, $p=0.001$). Flame burns predominated inintentional cases, with clinician suspicion showing high specificity (88.5%) and moderate sensitivity (73.7%). Logistic regression indicated higher depressive symptoms significantly predicted intentional burns (OR = 2.54, 95% CI: 1.18–5.49, p = 0.017), while drug use severity showed a positive but non-significant association.

Conclusion/Recommendations: Drug use severity is a strong predictor of intentional burn injuries and associated psychological distress. These findings highlight the urgent need for integrated substance abuse and mental health screening protocols in burn units to enable timely interventions, improve patient outcomes, and reduce morbidity, particularly in resource-limited settings.

Keywords: Burn injuries, intentional burns, drug abuse severity, DAST-10, PHQ-9, psychological distress.

MAP 5:

Abstract Title: AICA Loop in the Right Cerebellopontine Angle Presenting with Tinnitus: A Case Report

Dr Ghazala Wahid

Objective/Hypothesis: To highlight the role of magnetic resonance imaging in identifying an anterior inferior cerebellar artery (AICA) vascular loop in the cerebellopontine angle as a possible neurovascular cause of unilateral tinnitus and to emphasize the importance of clinical–radiological correlation in such cases.

Study Design: A CASE REPORT

Materials and Methods: We present a case of a 40-year-old male with right-sided, non-pulsatile tinnitus of several months' duration. There was no associated hearing loss, vertigo, or focal neurological deficit. Otoscopic examination and audiometry were unremarkable. Magnetic resonance imaging (MRI) of the brain with internal auditory canal protocol revealed a vascular loop of the right AICA in the CPA, closely abutting the cisternal segment of the right vestibulocochlear nerve, consistent with a Type II AICA loop. No mass lesion, demyelination, or other intracranial pathology was identified.

Results: MRI was performed on a high-field strength scanner. T2-weighted and high-resolution 3D T2 sequences (CISS/FIESTA) demonstrated a vascular loop of the right anterior inferior cerebellar artery (AICA) extending into the right cerebellopontine angle, closely abutting the cisternal segment of the right vestibulocochlear (VIII) nerve. The vascular loop was seen projecting toward the internal auditory canal (IAC) opening, consistent with a Type II AICA loop. No evidence of vestibular schwannoma, meningioma, demyelinating lesions, infarction, or mass lesion was identified. Brain parenchyma, brainstem, and contralateral CPA structures were unremarkable.

Conclusion/Recommendations: AICA vascular loops are commonly encountered on MRI and may be associated with tinnitus due to neurovascular contact with the vestibulocochlear nerve. MRI plays a crucial role in excluding alternative causes of unilateral tinnitus and in identifying possible neurovascular etiologies. However, imaging findings should be interpreted with caution, and clinical–radiological correlation is essential before attributing symptoms solely to vascular compression.

Keywords: Tinnitus, AICA loop, Cerebellopontine angle, MRI, Vestibulocochlear nerve

MAP 6:

Abstract Title: Improving Door-to-ECG Time in Acute Myocardial Infarction: A Closed-Loop Audit from a Tertiary Care Center in Peshawar

Dr Muhammad Mujtaba

Objective/Hypothesis: Our objective was to evaluate the current practice of timing of initial electrocardiogram of patients presenting with Acute myocardial infarction at our local cardiac hospital in Pakistan and implement changes with a complete closed loop audit.Study Design: Retrospective and prospective data collection

Materials and Methods: Retrospective and prospective data collection for all patients who presented to the emergency room of Peshawar Institute of Cardiology from September 2022 till September 2023. The hospital management information system and electronic medical record of the hospital was used for data collection.

Results: A total of 149 patients' data was collected and analyzed. The first cycle of the audit analyzed 29 patients, the second cycle of the audit analyzed 60 patients, and the third cycle of the audit again analyzed 60 patients. In the first set of patients, 17.2 percent of patients had a door-to-ECG time of less than 10 minutes, which was far from ideal. Therefore different departmental meetings were conducted and it was decided to set up a designated triage for ACS patients. Therefore, in the second cycle of the audit, 43.3% of patients achieved this time, showing improvement. During the third cycle, when the initial registration and formal paperwork for admission to ER were removed, 75% of patients had their ECG done within 10 minutes of the presentation.

Conclusion/Recommendations: This audit successfully identified the modifiable factors responsible for the delay in the first ECG, which included a lack of staff, non-viability of triage, and paperwork. After working on these factors our target Door to ECG time of 75% was achieved.

Keywords: Acute myocardial infarction, ECG, Electrocardiogram, STEMI, ST-elevation myocardial infarction, Audit.

MAP 7:

Abstract Title: Computed Tomography manifestations of fibrosing mediastinitis, an unusual cause of pulmonary symptoms; a case series.

Dr Mahnoor Rehman Khan

Objective/Hypothesis: The purpose of this study is to describe computed tomographic manifestations of fibrosing mediastinitis in eight pathological proven cases of fibrosingmediastenitis.

Study Design: cross sectional study

Materials and Methods: In this study, we describe the computed tomography findings in eight cases of pathologically proven fibrosing mediastinitis. Clinical data regarding the presentation and suspected etiology were correlated with the location of mediastinal disease, presence of calcification, contrast enhancement, effect on structures of the mediastinum, and additional associated findings on computed tomography.

Results: The mean age of patients was 39 years, with two female and six male patients. Two patients had diffuse involvement of mediastinum and six patients presented with local mass. Calcification was present in five cases. There was no contrast enhancement in all eight cases. Six ofeight cases revealed narrowing of mediastinal structures, with two cases showing pulmonary artery narrowing, three with superior vena cava obstruction, two with tracheal narrowing, and 1 with pulmonary vein narrowing.

Conclusion/Recommendations: Fibrosing mediastinitis is an unusual cause for common complaints like cough, shortness of breath, and chest pain. Familiarity with its different imaging features is crucial not only for accurate diagnosis but also for planning non-invasive and surgical procedures. Computed tomography can play a vital role in its diagnosis, workup and follow-up.

Keywords: fibrosing mediastinitis, computed tomography, mediastinum, SVC syndrome.

MAP 8:

Abstract Title: Prescription Chaos: Antimicrobial Resistance Challenges in a Tertiary Care Hospital

Dr Haseeb Hayat

Objective/Hypothesis: To evaluate awareness, perceptions, and antibiotic use behaviors related to antimicrobial resistance (AMR) among healthcare workers at Hayatabad Medical Complex. It is hypothesized that while AMR is recognized as a serious problem, awareness of local guidelines and adherence to rational antibiotic practices is limited due to inadequate training and systemic barriers.

Study Design: Hospital-based cross-sectional descriptive study

Materials and Methods: A structured self-administered questionnaire was distributed to 120–150healthcare workers (doctors, nurses, pharmacists) working in clinical departments. The questionnaire included demographics, 15 knowledge items (True/False/Don't know), attitude Likert scale items, and practice-based questions. Data were analyzed using SPSS v25. Chi-square test was used to assess associations between professional category, experience, and AMR-related practices Results: Preliminary analysis of 75 respondents (50% doctors, 35% nurses, 15% pharmacists)revealed low to moderate awareness with a mean knowledge score of 8.1/15. Only 28% of respondents reported awareness of any antibiotic stewardship initiative or guideline at the hospital level, while 62% indicated that no formal departmental guidelines were available to them. Although attitudes reflected high concern for AMR, 58% admitted prescribing antibiotics due to patient pressure. Only 34% routinely reviewed culture results, and <30% followed standardized prescribing approaches. Key barriers included lack of training, absence of local guidelines, delayed lab results, and patient expectations.

Conclusion/Recommendations: Healthcare workers at HMC demonstrate limited awareness and inconsistent antibiotic practices, primarily due to lack of formal guidelines and insufficient training. Implementation of institutional antibiotic policies, antimicrobial stewardship programs, and regular training sessions is recommended to promote rational antibiotic use.

Keywords: Antimicrobial resistance, antibiotic stewardship, healthcare workers, prescribing practices, Pakistan.

MAP 9:

Abstract Title: Well-begun is only half-done, Structured follow up identifying need for revision in a successful case of bronchoscopic lung volume reduction (BLVR)

Dr Hoor Kakakhel

Objective/Hypothesis: To highlight the importance of structured post-procedural follow-up after bronchoscopic lung volume reduction in identifying delayed valve related complications and enabling timely intervention to preserve clinical benefit.

Study Design: Observational single-patient case study

Materials and Methods: We retrospectively reviewed the clinical course of a 70-year-old female with severe chronic obstructive pulmonary disease and hyperinflation who underwent BLVR. Pre-procedural evaluation included pulmonary function testing, mMRC dyspnea scoring, and high-resolution chest CT with quantitative fissure analysis. Intra-procedural balloon occlusion testing was performed to assess collateral ventilation prior to valve placement. Five endobronchial valves were placed in the right lower lobe. Post-procedural follow-up included scheduled outpatient visits with symptom assessment. Revision bronchoscopy was performed to assess valve positioning and manage complications.

Results: The patient reported marked symptomatic improvement two weeks following BLVR. However, three months post-procedure, she developed recurrent dyspnea. On follow up, chest CT demonstrated migration of an endobronchial valve. Revision bronchoscopy confirmed valve displacement; the valve was removed intact and replaced with two smaller valves in distal RB6branches. The remaining valves were appropriately positioned and left in situ. Following revision bronchoscopy, the patient experienced renewed symptomatic improvement without further complications.

Conclusion/Recommendations: BLVR is a high-risk, high-reward procedure that can appreciably improve symptoms in appropriately selected patients. However, patient care extends beyond the procedure itself, and it is essential to follow up patients closely to proactively detect and treat complications and thereby ensure sustained improvement in clinical outcomes.

Keywords: Bronchoscopic lung volume reduction Endobronchial valves Emphysema Valve migration Post-procedural follow-up.

MAP 10:

Abstract Title: Impact of Targeted Education on Radiation Protection Awareness Among Radiologists and Radiology Technicians in Tertiary Care Hospital, Peshawar: A Quality Improvement Study

Dr Hafiza Ayesha Jawaid

Objective/Hypothesis: This study aims to evaluate the baseline awareness of radiation protection among radiologists and technicians in Peshawar's tertiary care hospital and to project the impact of a targeted educational intervention. Using a pre-lecture questionnaire followed by a modeled post-intervention analysis, it seeks to identify key knowledge gaps and quantify potential improvements in core safety principles, dose assessment, and dosimetry practices. The ultimate goal is to provide rationale for instituting regular, mandatory radiation safety training to enhance both occupational and patient safety.

Study Design: A pre- and post-intervention educational study (Quality Improvement Project).

Materials and Methods: Materials and Methods: A validated 25-item questionnaire was administered to 70 participants (42 radiologists and 28 radiology technicians) across three tertiary care hospitals in Peshawar. The questionnaire assessed demographics, self-awareness, core knowledge, radiation dose assessment, and dosimetry practices. Following baseline analysis, a focused 60-minute educational lecture on radiation protection principles, ALARA, dose optimization, and dosimetry was delivered. Post-intervention knowledge gain was modeled from baseline data.

Results: Results: Baseline data from 70 participants revealed significant knowledge gaps. Only31.4% (22/70) correctly identified the annual occupational dose limit. Understanding of relative doses was poor, with only 25.7% (18/70) accurately estimating a CT scan's dose equivalent. Post-intervention simulation projected substantial improvement, with correct identification of key principles rising to >85% and understanding of MRI/Ultrasound as zero-dose procedures reaching~95%. The most significant correction involved understanding dosimeter function.

Conclusion/Recommendations: A targeted educational intervention can substantially improve radiation protection knowledge among both radiologists and technicians. This supports implementing regular, mandatory radiation safety training for all radiology staff to bridge the knowledge-practice gap and enhance patient and occupational safety.

Keywords: Radiation Protection Health Personnel (or Radiology Staff) Knowledge Translation (or Health Education) Pakistan Diagnostic Radiology Quality Improvement.

MAP 11:

Abstract Title: IMPACT OF WORKLOAD AND WORK-RELATED STRESS ON DIETARY INTAKE ANDMEAL TIMINGS AMONG UNIVERSITY PROFESSIONALS IN HARIPUR: A QUALITATIVE STUDY

Ms Ayesha Riasat

Objective/Hypothesis: This Study Aim to explore the impact of how workload & work related stress the dietary patterns & meal timings among University Professionals & what possible initiatives should be taken by the authorities to overcome this workplace discomfort in institutions

Study Design: A Qualitative Exploratory Study design was used to gain in-depth insights into participants' lived experiences related to work-stress & eating behaviors.

Materials and Methods: The Study was conducted Among University Professionals from two Universities in Haripur (The University of Haripur & PAF-IAST Haripur) using purposive sampling. Semi-structured, in-depth interviews were conducted to collect qualitative data. Interviews focused on workload patterns, source of stress, dietary intake, meal timings & coping strategies. All interviews were audio recorded, transcribed verbatim, and analyzes using thematic analysis with the help of NVivo software Version 15. data saturation was achieved after multiple interviews, major themes were identified through an iterative coding process.

Results: Findings revealed that due to heavy workload, administrative responsibilities, student engagement, academic deadlines & research supervision significantly effect participants' dietary intake & meal timings. participants frequently reported that due to heavy workload & limited time constraints their meal often skipped & delayed. Other common issues include irregular eating patterns followed by both reduced & over eating respectively, over reliance on caffeinated beverages, fast food & reduced intake of home cooked meals. Participants also reported that this stress negatively effect their eating behaviors, appetite, mood, focus, productivity & overall energy levels, which lead to unhealthy dietary choices during busy workdays.

Conclusion/Recommendations: Findings indicate that due to heavy workload & work related stress directly disrupts the dietary intake & meal timings among university professionals. Implementation of fixed protected meal/lunch breaks is necessary to maintain regular meal patterns. higher institutional authorities should implement supportive workplace policies, stress management programs, access of healthy food options to promote better nutritional practices. Nutrition education & awareness sessions are also crucial for better meal choices among professionals in academic settings. Future research may explore Intervention-based strategies to improve dietary behaviors among teaching staff.

Keywords: workload, work related stress, dietary intake, meal timings, university professionals, qualitative study, public health nutrition.

MAP 12:

Abstract Title: Nano-biosensors for Rapid Detection of Antimicrobial Resistance

Ms. Tehreem Fatima

Objective/Hypothesis: To systematically review recent advances in nano biosensor-based diagnostic platforms for the rapid detection of antimicrobial resistance.

Study Design: Systematic literature review conducted in accordance with PRISMA guidelines.

Materials and Methods: A systematic literature search was conducted across relevant scientific databases to identify studies evaluating nano biosensor-based diagnostic approaches for antimicrobial resistance. Study selection, screening, and analysis were performed in accordance with PRISMA guidelines, focusing on sensor design, nanoparticle integration, diagnostic performance, and extent of clinical validation.

Results: The reviewed studies report the development of multiple nano biosensor prototypes, incorporating metal and non-metal nanoparticles combined with biorecognition elements. These platforms were evaluated using diverse clinical specimens and sample matrices, with several studies indicating enhanced sensitivity and reduced detection times compared to conventional diagnostic methods. Early-phase clinical evaluations were reported in a limited number of studies.

Conclusion/Recommendations: Nano biosensor-based diagnostic platforms demonstrate promising potential for improving the rapid detection of antimicrobial resistance. However, challenges related to nanofabrication costs, scalability, cross-reactivity, and limited large-scale clinical validation remain. Future research should prioritize standardized performance evaluation, expanded clinical trials, and the integration of artificial intelligence to support data analysis and scalability.

Keywords: nano-biosensor antimicrobial resistance antibiotic resistance drug resistance AMR detection point-of-care diagnosis Boolean search strings: ("nano-biosensor" OR "nano sensor" OR “biosensor") AND ("antimicrobial resistance" OR "antibiotic resistance" OR "drug resistance" OR"AMR") AND ("detection" OR "diagnosis" OR "point-of-care" OR "rapid test").

MAP 13:

Abstract Title: Anaplastic Thyroid Carcinoma (Stage 4c) in a 23-Year-Old Pregnant Woman: A Rare Presentation with Diagnostic Challenges and Treatment Barriers Leading to Poor Disease Control and Fatal Outcome.

Dr Ubaid Ullah Mian

Objective/Hypothesis: Anaplastic thyroid carcinoma (ATC) is an extremely rare and aggressive malignancy, accounting for less than 2% of thyroid cancers, with most cases occurring in elderly patients (typically >65 years). Its presentation in young adults, particularly during pregnancy, is exceptionally uncommon, posing significant diagnostic and therapeutic challenges.

Study Design: Key Clinical Message: ATC in young, pregnant patients is rare but devastating. Normal thyroid function tests and pregnancy-related physiological changes can mask malignancy, delaying diagnosis. Early suspicion, timely biopsy, and multidisciplinary collaboration are critical for improving outcomes.

Materials and Methods: Case Presentation: A 23-year-old female in her second trimester presented with a rapidly enlarging neck mass, dysphagia, dyspnea, and weight loss. Initial investigations revealed anemia and leukocytosis, while thyroid function tests were normal. Imaging and biopsy confirmed ATC with systemic metastases, including liver involvement (Stage 4c). Pregnancy-related constraints delayed definitive treatment. Case Management: A multidisciplinary approach was adopted, including tracheostomy for airway obstruction and palliative care. Post-delivery, CT scans revealed significant tumor progression with liver metastases. Despite aggressive supportive measures, the patient's condition deteriorated rapidly, leading to a fatal outcome.

Results: Research into pregnancy-specific management guidelines for ATC is urgently needed. Enhanced awareness among clinicians about atypical presentations in young patients and improved access to multidisciplinary care are essential to address such challenging cases.

Conclusion/Recommendations: This case underscores the aggressive nature of ATC and the complexities of managing it during pregnancy. Ethical, social, and therapeutic barriers further complicate care, emphasizing the need for early intervention and tailored strategies.

Keywords: Anaplastic thyroid carcinoma, pregnancy, rare malignancy, diagnostic challenges, multidisciplinary management, palliative care, liver metastasis.

MAP 14:

Abstract Title: ANGIOGRAPHIC PROFILE IN YOUNG PATIENTS PRESENTING WITH STEMI

Dr SOMERA NAZ

Objective/Hypothesis: To evaluate the angiographic characteristics, associated variables, and demographic features of young patients (aged ≤45 years) diagnosed with STEMI.

Study Design: Observational cross sectional study performed at Cardiology department of Shifa International Hospital, Islamabad.

Materials and Methods: This study included 78 patients, aged 45 years or younger, who presented with a confirmed diagnosis of STEMI on electrocardiography and coronary angiography. The study was conducted at the Department of Cardiology, Shifa International Hospital, Islamabad, from 19th September 2024 to 18th December 2024. Data were collected on patient demographics, cardiovascular risk factors, and angiographic findings. Angiographic evaluation included coronary artery involvement, lesion location, severity, and complexity. Subgroup analyses were performed based on age, gender, and cardiovascular risk factors. Statistical analysis was performed using SPSS version 23, with significance set at $p < 0.05$

Results: The mean age of participants was 40.2 years, with 41.02% aged ≤35 and 58.98% aged 36–45. Males comprised 71.79%, while females accounted for 28.21%. Cardiovascular risk factors were present in 57.69% of patients, with smoking being the most prevalent (67.94%), followed by hypertension (32.05%) and diabetes (20.51%). The most commonly affected coronary artery was the RCA (43.75% in ≤35 and 47.83% in 36–45), followed by the LAD (31.25% and 34.78%, respectively) and LCx (25% and 39.13%, respectively). No significant gender differences were observed in angiographic characteristics

Conclusion/Recommendations: This study highlights the angiographic and demographic profile of young STEMI patients, emphasizing the predominance of male patients with significant cardiovascular risk factors, particularly smoking. Further research with larger cohorts is needed to confirm these findings and explore potential gender differences.

Keywords: Acute coronary syndrome, angiography, cardiovascular risk factors, coronary artery disease, myocardial infarction, STEMI, young adults.

MAP 15:

Abstract Title: Oxygen Is a Drug, Not Just Air: A Cross-Sectional Study of Oxygen Prescription Practices in Hospitalized Adults

Dr Muhammad Abbas

Objective/Hypothesis: To evaluate awareness, perceptions, and practices related to oxygen prescription and monitoring among healthcare workers at Hayatabad Medical Complex. It is hypothesized that while oxygen therapy is widely used, adherence to BTS 2017 guidelines, including prescription of delivery device, flow rate, and target SpO2—is suboptimal due to limited staff knowledge, inconsistent documentation practices, and systemic barriers in acute care settings.

Study Design: Hospital-based cross-sectional study.

Materials and Methods: A hospital-based cross-sectional study was conducted at Hayatabad Medical Complex, Peshawar. Using a structured proforma aligned with BTS standards, 101 adult inpatients receiving oxygen therapy across Pulmonology, General Medicine, Surgical, and allied wards were assessed. Data included documentation of oxygen prescription on the drug chart, delivery device, flow rate, target SpO2 range, and evidence of oxygen saturation monitoring. Patients admitted <24 hours, ICU patients on mechanical ventilation, pediatric patients (<15 years),and palliative/end-of-life patients were excluded. Compliance was expressed as percentages.

Results: Oxygen was prescribed on the drug chart in 78% of patients, indicating partial adherence to BTS standards. However, prescription completeness was poor. A target SpO2 range was documented in only 3% of cases, while 90% had no target range specified. The oxygen delivery device was recorded in 74.3%, but the flow rate was documented in just 10.9% of prescriptions. Regular SpO2 monitoring was observed in 73% of patients. Key barriers included limited staff awareness of BTS guidelines, high workload in acute wards, inconsistent use of prescription charts, and the perception of oxygen as routine nursing care rather than a prescribed drug.

Conclusion/Recommendations: Although oxygen was prescribed in most patients, compliance with BTS guidelines was suboptimal, particularly regarding documentation of target saturation ranges and flow rates. These gaps increase the risk of under- and over-oxygenation, potentially compromising patient safety. Focused staff education, standardized oxygen prescription charts, system-level documentation improvements, and regular re-audits are essential to reinforce oxygenase a prescribed drug and improve safety.

Keywords: Oxygen therapy, prescription practices, BTS guidelines, patient safety, cross-sectional study.

MAP 16:

Abstract Title: Cost of a Skipped Visual Field Test: Misdiagnosed Pituitary Adenoma Leading to Irreversible Vision Loss — A Case Report from Rural Pakistan

Muhammad Shahbaz Khan

Objective/Hypothesis: Objective: To emphasize the importance of visual field testing in suspected glaucoma to prevent misdiagnosis of compressive optic neuropathies such as pituitary adenoma. Hypothesis: Omission of perimetry in suspected glaucoma increases the risk of delayed diagnosis and irreversible visual loss from intracranial tumors.

Study Design: CASE REPORT

Materials and Methods: A 55-year-old woman from rural Pakistan presented with painless, progressive vision loss. Initial ophthalmoscopic examination revealed optic disc cupping, leading to a presumptive diagnosis of glaucoma. Anti-glaucoma therapy was started without visual field assessment. Over the following weeks, her vision deteriorated despite adherence to treatment. Referral to a tertiary eye care facility resulted in perimetry, which demonstrated severe left-eye constriction (10% remaining vision) and partial right-eye loss. MRI of the brain revealed a pituitarymacroadenoma compressing the optic chiasm. The delayed diagnosis caused irreversible blindness in the left eye and significant impairment in the right eye.

Results: This case highlights the essential role of visual field testing in distinguishing glaucomatous from non-glaucomatous optic neuropathies. Although pituitary adenomas are less common than glaucoma, they must be considered in atypical cases. In resource-limited environments, economic and logistical constraints frequently limit access to perimetry, increasing the risk of missed intracranial pathologies

Conclusion/Recommendations: Omitting visual field testing in suspected glaucoma cases can result in irreversible vision loss and delayed detection of life-threatening brain tumors. Expanding access to perimetry and strengthening diagnostic vigilance among primary eye care providers is critical, especially in rural and underserved regions.

Keywords: Pituitary adenoma, Glaucoma, Misdiagnosis, Visual field testing, Low-resource setting

MAP 17:

TITLE: UNVEILING THE THREAT: TUBERCULOSIS PREVALENCE AND RISK FACTORS IN PESHAWAR

Syed Muzaffar Shah

Background & Objectives: Tuberculosis remains a major public health concern in Pakistan, particularly in densely populated and socioeconomically vulnerable cities such as Peshawar, where environmental conditions and limited access to healthcare contribute to ongoing transmission. This study aimed to determine the prevalence of tuberculosis in Peshawar and identify key demographic, socioeconomic, environmental, and health-related risk factors associated with infection.

Methods: A cross-sectional study was conducted from January to December 2024, involving 2,600 participants, including confirmed tuberculosis patients and non-infected individuals. Data were collected through structured interviews and medical record reviews from public and private healthcare facilities, tuberculosis clinics, and community health centers. Variables analyzed included age, gender, socioeconomic status, education level, smoking history, diabetes, malnutrition, overcrowding, and access to healthcare services.

Results: Statistical analysis revealed a tuberculosis prevalence of 0.413, with higher infection rates among males and individuals aged 25 to 45 years. Tuberculosis was strongly associated with low socioeconomic status, illiteracy, smoking, diabetes, malnutrition, overcrowded living conditions, and limited healthcare access.

Conclusion: These findings highlight the persistent burden of tuberculosis in Peshawar and emphasize the role of poverty, lifestyle factors, chronic disease comorbidity, and inadequate health infrastructure in sustaining transmission. The study underscores the need for early detection programs, targeted public awareness initiatives, strengthened healthcare systems, and integrated management of tuberculosis and non-communicable diseases. Addressing socio-economic inequalities and improving access to diagnostic and preventive services may significantly reduce the disease burden.

Keywords: Tuberculosis, Prevalence, Risk Factors, Peshawar, Public Health

2. Surgery and Allied

SAP 1:

Abstract Title: Determinants of Postoperative Hemoglobin Changes After Tangential Excision in Burn Patients: A Cross-Sectional Study

Dr Waseem Ullah

Objective/Hypothesis: To identify the surgical and physiological determinants affecting the magnitude of postoperative hemoglobin (Hb) drop in burn patients undergoing tangential excision.

Study Design: Cross-sectional study.

Materials and Methods: A total of 115 patients undergoing tangential excision were enrolled. The primary outcome measure was the "Delta Hb" (Pre-operative Hb minus Post-operative Day 1 Hb). The key determinants analyzed included Percentage of Total Body Surface Area (TBSA) excised, Body Weight, and Timing of Surgery. Linear regression analysis was performed to quantify the impact of these variables on blood loss.

Results: The mean postoperative Hb drop was 2.9 \pm 1.2 g/dL. Percentage of Excision was the strongest surgical predictor ($p < 0.001$); for every 1% increase in excision area, hemoglobin dropped by 0.24 g/dL. Body Weight showed a significant inverse correlation ($p = 0.03$); for every 10kg decrease in weight, the Hb drop increased by 0.4 g/dL due to lower total blood volume. Timing of Surgery was also significant; delayed excision (>5 days) caused a 0.6 g/dL greater drop compared to early excision ($p=0.01$). Determinants of Postoperative Hemoglobin Changes After Tangential Excision in Burn Patients. Regarding demographics, female gender and advanced age were associated with significantly higher relative hemoglobin depletion ($p < 0.05$).

Conclusion/Recommendations: Hemoglobin drop is predictably determined by the extent of excision (0.24 g/dL per 1% TBSA) and delayed surgical intervention. Additionally, patients with low body weight, as well as females and the elderly, represent high-risk groups prone to exaggerated postoperative anemia, necessitating blood conservation strategies in such cases.

Keywords: Tangential excision,

SAP 2:

Abstract Title: EWING'S SARCOMA OF THE INFRAHYOID MUCOSAL SPACE : THE ONE CASE OF EWING'S SEEN IN THIS REGION

Jalwa Khan

Objective/Hypothesis: First ever reported case of ewing's seen in the mucosal space of infrahyoid region Study Design:

Introduction : Ewing's sarcoma (ES) is the second most common malignant bone tumor in children and adolescents, though it occasionally arises in soft tissues. 1 Classified within the Ewing's sarcoma family of tuES predominantly affects bones, 45% particularly the femur. The head and neck region is rarely involved. To our knowledge, ES localized to the mucosal space of the infrahyoid region has not been previously documented.

Materials and Methods: Case Presentation : A 24 year old male, presented with gradual onset of neck mass and dysphagia for one month, then he developed dyphonea later on. There was no history of neck trauma. The patient also reported constitutional symptoms such as weight loss and cachexia. Upon examination by a primary care physician, a mass was palpated in the infrahyoid region without palpable cervical lymphadenopathy.

Results: Imaging and histopathology : Imaging (CT scan) revealed a poorly marginated mass (roughly measuring up to 37mm) centred on the infrahyoid supraglottic mucosal space particularly the right ary-epiglottic fold. Flurescence in situ hybridization (FISH) was performed on the biopsy specimen, which displaced two fusion signals per nucleus, indicating an intact EWSR1 gene, supporting the diagnosis of Ewing's sarcoma. Histopathological analysis repeated from a different lab due to the highly unsual results that yeilded the same findings.

Conclusion/Recommendations: This report documents the first known case of Ewing's sarcoma arising in the mucosal space of the infrahyoid region, a previously undocumented site. Despite the rarity of this unusual location, adhering to thefundamental principals of diagnosis, multimidal chemotherapy, and careful clinical managemnt led to significant improvent in the patient's condition.

Keywords: Ewing's sarcoma, infrahyoid mucosal space masses, ESFT

SAP 3:

Abstract Title: Comparison of Ureteroscopy and Percutaneous Nephrolithotomy in the Management of Proximal Ureteric Stones Larger Than One Centimetre Using Pneumatic Lithoclast

Atif Rahman

Objective/Hypothesis: This study aimed to compare URS and PCNL using pneumatic lithoclast in the management of proximal ureteric stones with respect to operative time, stone clearance, hospital stay, and complications.

Study Design: Reterospective comparative study

Materials and Methods: A retrospective comparative study was conducted on patients with radiologically confirmed proximal ureteric stones treated between August 2015 and August 2020. Patients were initially planned for URS with the option of conversion to PCNL or were primarily scheduled for PCNL based on stone burden or the presence of associated renal stones. A total of 104 patients involving 108 renal units were analyzed. Forty-four units were managed with URS and 61 units with PCNL. Cases requiring open surgery after failure of both procedures were excluded from comparative analysis. Operative time, stone clearance, postoperative outcomes, and complications were recorded and analyzed.

Results: The mean operative time was shorter in the URS group (44 minutes; range 35–76 minutes) compared to the PCNL group (70 minutes; range 50–102 minutes). URS was associated with fewer intraoperative and postoperative complications and lower analgesic requirements. However, stone migration into the kidney occurred in nine URS cases, and residual ureteric fragments were detected in two cases, requiring auxiliary procedures. PCNL achieved complete stone clearance in all cases, though with relatively longer operative time and increased postoperative analgesic requirement. No patient required blood transfusion. Double-J stents were placed in all patients in both groups.

Conclusion/Recommendations: URS using pneumatic lithoclast is a safe and effective option for selected proximal ureteric stones, offering shorter operative time and fewer complications. PCNL provides superior stone clearance and is better suited for large stone burden, impacted or hard stones, and cases with associated renal calculi.

Keywords: Proximal ureteric stones, URS, PCNL, pneumatic lithoclast, stone clearance

SAP 4:

Abstract Title: There is no free Lunch: Cost estimation of Urological Procedures for Urolithiasis according to Markov Model

Muhammad Ayaz

Objective/Hypothesis: To determine the cost estimation of different urological procedures on Markov model

Study Design: Descriptive Study

Materials and Methods: After the IREB approval , this descriptive study was conducted in department of Urology Team C IKD/HMC/KGMC from January to June 2025. Cost estimation of majority of common urological procedures for urolithiasis was performed using Markov model, that included direct cost, indirect cost, services cost , Instrument costs and insensible cost of patients and attendants by not working on operation days and also acquiring leaves. The data was recorded by all concerned quarters and was analyzed on SPSS.

Results: The mean TOTAL cost of free PCNL out of total 66 PCNL is 77015±6911 PKR. 87 ESWL 38699.4±5857.3,25 Open stone surgery 78080±5943.3, 58 URS 52507.8±14353.6 PKR. The Anova showed significant value of p=0.001 between groups and with in Groups. The Welch test for robusttest of equality of means showed significant p value of 0.001. The indirect costs are significant factor on Pearson coefficient correlation p=0.001. The mean number of attendants not attending the duty was 4.2 ±2.1 on operation day and 3.1±1.1 on date of discharge. The patients didn't attend their workplace and acquire leave in 42 ±9.1 days in PCNL, 5.61 ±12.1 days in OSS, 31 ±12.1 days in URS and22 ±5.1 days in ESWL. There was significant difference on Anova p=0.000 for services costs of health care providers and endourological equipments.

Conclusion/Recommendations: The cost estimation of different urological procedures revealed high direct and indirect costs and the indirect costs are mainly due to absence of work of patients even after day case procedures like ESWL. This societal norms of not working is negatively affecting essence of minimal invasive surgery/day case procedures.

Keywords: Urolithiasis, Endourology, Markov Model

SAP 5:

Abstract Title: Association of Chronic Smokeless Tobacco Use with Micro-vascular Patency and Wound Healing in Lower Limb Reconstructive Flaps: A Retrospective Analysis

Waseem Ullah

Objective/Hypothesis: To determine whether chronic smokeless tobacco (Naswar) use is associated with compromised microvascular patency and impaired wound healing in patients undergoing lower limb reconstructive flap surgery.

Study Design: Retrospective cohort study

Materials and Methods: Medical records of 87 patients who underwent lower limb reconstructive flap surgery at the Burn and Plastic Surgery Center, Peshawar, were reviewed. Patients were categorized into chronic smokeless tobacco users (n=45) and non-users (n=42). Concomitant cigarette smokers and uncontrolled diabetics were excluded to isolate the effect of smokeless tobacco. Flap types included free tissue transfers and pedicled fasciocutaneous flaps. Primary outcomes were flap survival, microvascular thrombosis, and time to wound healing.

Results: Demographics and flap types were comparable between groups ($p>0.05$). Smokeless tobacco users demonstrated higher rates of partial flap necrosis compared to non-users (17.7% vs4.7%, $p=0.04$). While total flap loss was higher in users (8.8% vs 2.3%), this did not reach statistical significance ($p=0.18$). However, the mean time to complete wound healing was significantly prolonged in users (7.2 ± 1.8 weeks vs 4.9 ± 1.2 weeks, $p<0.001$). Users also had a significantly higher incidence of minor wound dehiscence (28.8% vs 9.5%, $p=0.02$).

Conclusion/Recommendations: Chronic smokeless tobacco use is a significant predictor of delayed wound healing and partial flap necrosis, though it may not independently cause total flap failure in all cases. Surgeons should classify these patients as "high-risk" for wound complications.
Keywords: Smokeless tobacco, microvascular surgery, wound dehiscence, lower limb reconstruction.

SAP 6:

Abstract Title: Identifying risk factors for fever and sepsis after percutaneous nephrolithotomy: a single-centre study in Pakistan

Muhammad Waqas

Objective/Hypothesis: To determine the frequency of postoperative fever and sepsis following percutaneous nephrolithotomy (PCNL) and to identify associated preoperative and intraoperative risk factors.

Study Design: Descriptive

Materials and Methods: The study was conducted at the Department of Urology, Institute of Kidney Diseases, Hayatabad Medical Complex, Peshawar, Pakistan, from January 15 to May 31, 2025. A total of 110 adult patients undergoing PCNL were enrolled. Data were collected and analysed using SPSS version 23. A p-value <0.05 was considered statistically significant.

Results: The median age of patients was 38 years (IQR: 20), with 58.2% being male and 41.8% female. Postoperative fever occurred in 38 out of 110 patients (34.5%), while sepsis developed in 6 patients (5.5%). On forward-stepwise multivariate logistic regression, staghorn calculi (aOR 8.95; 95% CI 4.12–21.20; p = 0.008), partial staghorn calculi (aOR 4.64; 95% CI 1.17–18.52; p = 0.030) andobesity (BMI ≥ 30 kg/m²; aOR 44.4; 95% CI 1.70–1164; p = 0.023) remained independent predictors. On univariate analysis, longer operative time was significantly associated with both fever (U = 1038.0; p = 0.034) and sepsis (U = 296.5; p = 0.002).

Conclusion/Recommendations: Staghorn calculi, partial staghorn calculi and obesity independently predict postoperative fever after PCNL. Longer operative duration is associated with both fever and sepsis on univariate analysis. Identifying these risk factors can help tailor perioperative care and ensure closer postoperative monitoring, ultimately aiming to reduce the risk of complications.

Keywords: Percutaneous nephrolithotomy PCNL Risk factors Fever Sepsis Pakistam

SAP 7:

Abstract Title: Complications arising from the use of foot abduction orthrosis(FAO) in Ponseti treated club foot patients.

Sayyed Abubakkar

Study Design: Prospective observational study.

Materials and Methods: This prospective study was conducted at the Miracle Feet-supported Clubfoot Clinic in Khyber Teaching Hospital, Pakistan. Ninety-one clubfoot patients under age 2 years with the post casting Pirani score "0" were enrolled through convenience sampling. Complications were recorded at 24 hours, day 7, day 14, and day 30 using a standardized, pilot tested questionnaire .Brace ease-of-use was assessed using an adapted USAID Miracle Feet tool. Descriptive statistics were applied using SPSS v29.

Results: At 24 hours, pain(88%) and skin reddening (75.8%) were the most common complications, followed by blisters/sores (42.9%) and distal tibial swelling(26.4%). Most complications decreased by day 30, however, muscle atrophy and weakness peaked at 32% on day 14 and persisted in24.2% of patients. Callus formation occurred in 10% of cases. Sweating discomfort and abduction bar breakage (9 cases) were late complications. Overall brace usability was favorable, though heel placement was most difficult.

Conclusion/Recommendations: These findings highlight the need for improved brace design, personalized follow-up management, and setting realistic expectations for caregivers.

Keywords: clubfoot, ponseti treatment, Foot abduction orthrosis, pediatric orthopedics, brace complications.

SAP 8:

Abstract Title: Non-Invasive Diagnostic Strategies for Brainstem Lesions: A Systematic Review of Accuracy, Safety, and Clinical Outcomes

Muhammad Aftab Hassan

Objective/Hypothesis: The chief purpose of this study was to systematically evaluate the diagnostic accuracy, safety, and clinical outcomes of currently available non-invasive diagnostic modalities for the assessment and characterization of brainstem lesions

Study Design: Systematic Review

Materials and Methods: This study utilized a systematic review design following PRISMA guidelines. A comprehensive search was conducted in PubMed, Scopus, Web of Science, Embase, and the Cochrane Library for studies published between January 2017 and October 2025.. The population included patients of all ages presenting with brainstem lesions. Inclusion criteria focused on studies evaluating non-invasive techniques (MRI, MRS, DTI, PET, or radiomics) with reported diagnostic outcomes. Exclusion criteria were case reports, non-human studies, and studies lacking a reference standard. Data collection involved extracting accuracy metrics and concordancewith histopathology. Quality assessment was performed using QUADAS-2 and ROBINS-I tools. Narrative synthesis was used for statistical analysis due to high heterogeneity.

Results: Six studies met the inclusion criteria, encompassing MRI/MRS (n=3), DTI (n=2), PET (n=1), and radiomics (n=2). MRS achieved a sensitivity of 80–100% and specificity of 75–100% in differentiating diffuse intrinsic pontine glioma from other lesions ($p < 0.05$). DTI-based tractography demonstrated high utility in delineating lesion–Fiber relationships but lacked robust histopathologic validation. Radiomics models reported classification accuracies between 70% and 85%. Most studies exhibited a moderate-to-serious risk of bias.

Conclusion/Recommendations: This study falls within the discipline of Neurosurgery and Neuroradiology. The investigated concepts include the diagnostic reliability of advanced imaging over invasive biopsy. Through a systematic evaluation process, it was found that Non-invasive diagnostic techniques show meaningful potential for characterizing brainstem lesions, but the evidence remains limited by small sample sizes and heterogeneity. While MRI and MRS provide the strongest evidence for clinical use, DTI and PET require further prospective validation. These modalities should be considered complementary to biopsy in cases requiring definitive diagnosis.

Keywords: Brain Stem Neoplasms; Magnetic Resonance Spectroscopy; Positron-Emission Tomography; Diffusion Tensor Imaging; Radiomics

SAP 9:

Abstract Title: Preoperative Embolization in Intracranial Meningioma Surgery: An Updated Systematic Review of Operative and Postoperative Outcomes

Muhammad Aftab Hassan

Objective/Hypothesis: The chief purpose of this study was to evaluate the impact of preoperative embolization on intraoperative blood loss, operative duration, the extent of resection, and postoperative complication rates in patients undergoing surgical excision for intracranial meningioma.

Study Design: Systematic Review

Materials and Methods: Following PRISMA guidelines, a systematic literature search was conducted across PubMed, Scopus, and Embase for studies published between January 2017 and October 2025. The population included adult patients diagnosed with intracranial meningiomas. Inclusion criteria consisted of English-language, non-randomized comparative studies comparing POE to no embolization. Exclusion criteria were case reports and non-human studies. The sample size was derived from 13 eligible studies. Data collection tools were used to extract outcomes including blood loss, operative time, and gross total resection (GTR) rates. Statistical analysisinvolved a narrative synthesis and risk of bias assessment using the ROBINS-I tool due to high study heterogeneity.

Results: Thirteen studies met the inclusion criteria. Preoperative embolization significantly increased the likelihood of achieving GTR in 38% of the analysed studies ($p < 0.05$). Findings concerning intraoperative blood loss and operative time were highly inconsistent across the literature. A non-significant trend toward fewer overall complications was noted in the embolization cohorts. Data on long-term tumor recurrence were extremely limited, reported in only 7.7% of the studies, which precluded a definitive synthesis of long-term oncological outcomes. Significant methodological variability was identified across all included papers.

Conclusion/Recommendations: This study, situated within the discipline of Neurosurgery and Interventional Neuroradiology, investigated the concepts of tumor devascularization and its impact on surgical resectability. Through a methods and process involving a PRISMA-compliant systematic review and narrative synthesis, the summary of findings indicates that preoperative embolization consistently improves the likelihood of achieving Gross Total Resection in intracranial meningiomas. However, its benefits in reducing intraoperative blood loss and operative time remain inconsistent. Neurosurgeons should consider POE primarily when maximal resection is the main goal, particularly for highly vascular lesions.

Keywords: Meningioma; Embolization, Therapeutic; Neurosurgical Procedures; Treatment Outcome; Blood Loss, Surgical

SAP 10:

Abstract Title: Incidental Presentation of Mucinous Adenocarcinoma as Descending Colo-Colic Intussusception and Its Successful Management

Dr. Parsa

Objective/Hypothesis: Incidental Presentation of Mucinous Adenocarcinoma as Descending ColoColic Intussusception and Its Successful Management

Study Design: Case report

Materials and Methods: Adult intussusception occurs in only 1% of bowel obstruction cases, a rare and challenging-to-diagnose condition.1 As compared to paediatric cases, adult intussusception usually has a pathological lead point, with up to 50% of cases being caused by malignancy, most frequently primary adeno- carcinoma.2 To prevent severe complications, including sepsis, intestinal ischaemia, or perforation, early diagnosis is crucial. CT imaging is the gold standard diagnostic modality, while surgical intervention is a definitive treatment option.3 The authors describe a rare case of a 35-year male who deve- loped descending colonic intussusception due to a poorly differentiated mucinous adenocarcinoma with signet-ring cells. This is an uncommon occurrence in a young adult who did not have any predisposing risk factors.The successful management involved emergency laparotomy, left colectomy with double-barrelled colostomy, and adjuvant chemo-therapy.

Results: A 35-year male with no significant comorbidities presented to the Emergency Department with acute severe abdominal pain, bilious non-bloody vomiting for one day, and absolute constipation with no flatus for two days. He also reported a one-month history of dull, generalised abdominal discomfort, intermittent fresh rectal bleeding in small amounts, and relative constipation. There was no history of weight loss, altered bowel habits, inflammatory bowel disease, or family history of colorectal malignancy. On examination, the patient was afebrile, normotensive, and tachycardic (110 bpm). Abdominal examination revealed mild distension, left lower quadrant tenderness, and a palpable, non- mobile, and transversely placed mass. Digital rectal examination showed a ballooned rectum with blood staining. Contrast-enhanced CT of the abdomen confirmed a large segment of descending colonic intussusception with proximal bowel dilatation, suggesting obstruction (Figure 1). Emergency exploratory laparotomy revealed a colocolic intussusception distal to the splenic flexure, with a firm intraluminal mass. The involved omentum was reduced, and a left colectomy with end transverse colostomy and distal mucous fistula (double-barrelled colostomy) was performed, with 5 cm margins on either side. Recovery was uneventful, and the patient was discharged after five days. Histopathological examination revealed a poorly differentiated mucinous adenocarcinoma with signet-ring cells (pT3N1aM0),

involving one of 17 lymph nodes. Adjuvant chemotherapy with Oxaliplatin and Capecitabine was initiated, which was well tolerated. Post-treatment colonoscopy showed a normal rectum and anus, with a sigmoid polyp; the descending colon and splenic flexure had been resected. As per the oncology multidisciplinary team (MDT) guidance, the patient remained under surveillance with periodic imaging and tumour marker monitoring. As of the last follow-up in March 2025, making the total follow-up duration of 14 months, he remained clinically well.

Conclusion/Recommendations: In conclusion, this case highlights the importance of considering malignancy in adult intussusception and reinforces the value of prompt, multidisciplinary intervention for optimal outcomes.

Keywords: Mucinous adenocarcinoma, Adult intussusception, Exploratory laparotomy.

SAP 11:

Abstract Title: BIZARRE PRESENTATION OF UROLOGICAL CANCERS: A CASE SERIES

DR. SHEHZAD FAIZ

Objective/Hypothesis: Urological cancers are an umbrella term for cancers of the prostate, kidney, bladder, penis, and testis. The usual clinical presentation of different urological cancers includes hematuria, pain, lower urinary tract symptoms, or incidental findings. The mean age of presentation for renal tumors, bladder tumors, adenocarcinoma prostate and male genital tumors is 65, 73, 67 and 60 years, respectively. The usual histopathological findings are bladder cancer (TCC, 95%), prostate cancer (Adenocarcinoma, 90%), Renal tumors (RCC, 70%), penile tumors (Squamous cell carcinoma, 90%) and testicular tumors (Germ cell tumors, 82%). Bizarre presentation in terms of clinical presentation, age, histopathology and usual staging however have been rarely reported. The objective of this study is to present a case-series of unusual presentation of urological cancers in a single tertiary care hospital.

Study Design: Descriptive study - Case Series

Materials and Methods: This descriptive study was conducted in the department of Urology at the Institute of Kidney Diseases, Peshawar from March 2021 till June 2024. A total of 14 patientsthrough non-probability convenient sampling were included in the study. Patients with rare presentations including clinical, age, histopathology and tumor staging, were included in the study.

Results: In 9 patients, the presentation was unusual with respect to age. Among these, three cases of TCC bladder were seen in children with an average age of 14.3 years (2 male, 1 female), two cases of Renal cell carcinoma in patients younger than 20 years (mean age 17.5 years), two cases of adenocarcinoma prostate (mean age 44.5 years), and two cases of squamous cell carcinoma of penis (mean age 26.5 years). The adenocarcinoma prostate was metastatic disease, an unusual staging at this age of presentation. In 3 patients, the histopathology showed rare findings including mucinous adenocarcinoma of the kidney, liposarcoma of the kidney, and TEF trans locational renal cell carcinoma. In 2 cases, a rare paraneoplastic manifestation of renal tumors, i.e. Stauffer syndrome, was seen.

Conclusion/Recommendations: Urological cancers can present in unusual forms and may require a high level of suspicion for diagnosis. Keywords: Urological Cancers, Bizarre Presentation, Stauffer Syndrome

SAP 12:

Abstract Title: Warfare Injuries: A Case Series of Retained Foreign Bodies in the Genitourinary Tract

DR. SHEHZAD FAIZ

Objective/Hypothesis: To present the management of retained foreign bodies in the genitourinary system resulting from warfare, bomb blasts, and firearm-related injuries.

Study Design: Descriptive case series

Materials and Methods: Patients with retained foreign bodies in the genitourinary tract, resulting from previous exposure to bomb blasts, mines, and firearm-related injuries, were included in this study. All patients underwent surgical management. Descriptive statistics were determined for location, duration of retention, type of foreign body, outcome, length of hospital stay, and postoperative complications.

Results: All 14 patients included in the study were male, with a mean age of 30.85 ± 13.38 years. The average indwelling time of these foreign bodies was 33.50 ± 16.34 months, ranging from 10 to 61 months. These foreign bodies were retained in the kidney (n = 5), urinary bladder (n = 4), and testes and ureter (n = 2; each); penis was involved in one case. The extracted foreign bodies weremetal pellets (n = 12) and bullets (n = 2). The successful removal of pellets and bullets from kidneys and bladder was achieved endoscopically in nine cases. The mean length of hospital stays for open and endourological procedures was 4.0 ± 1.41 days and 3.5 ± 2.13 days, respectively (p = 0.630). Postoperative complications were reported in one case only, which required a blood transfusion; it was labelled as Clavien-Dindo Grade II.

Conclusion/Recommendations: Retained foreign bodies in the genitourinary tract in warfare injuries are uncommon and can be managed effectively with endourological as well as open surgery.

Keywords: Retained foreign bodies, Genitourinary tract, Bomb blasts, Warfare

SAP 13:

Abstract Title: Post-operative outcomes in Opioid-free vs Opioid-based anesthetic in patients undergoing Laparoscopic cholecystectomy: A grade-assessed systematic review and meta-analysis

Syed Hatim Hussain

Objective/Hypothesis: Laparoscopic cholecystectomy (LC) is a common procedure for cholelithiasis and cholecystitis, and anesthetic technique significantly influences postoperative outcomes. Conventional opioid-based anesthesia (OBA) is widely used but linked to nausea, vomiting, and delayed recovery. Opioid-free anesthesia (OFA), utilizing agents such as dexmedetomidine, lidocaine, and ketamine, is emerging as a promising alternative.

Study Design: Systematic Review and Meta-analysis.

Materials and Methods: A systematic search of PubMed, ClinicalTrials, and Cochrane databases was performed up to May 2025. Five studies reporting postoperative outcomes of OFA versus OBA were included. Pooled results were expressed as mean difference (MD) with 95% confidence intervals (CI). Heterogeneity was assessed using the I^2 statistic.

Results: OFA demonstrated superior postoperative pain control at 6, 12, and 24 hours compared with OBA [6 h: MD = −0.28 (95% CI: −0.45 to −0.10, p = 0.002); 12 h: MD = −0.62 (95% CI: −0.84 to−0.40, p < 0.00001); 24 h: MD = −0.34 (95% CI: −0.53 to −0.15, p = 0.0006)]. The incidence of nausea and vomiting was also significantly lower with OFA [nausea: RR = 0.33 (95% CI: 0.20–0.56, p < 0.0001); vomiting: RR = 0.29 (95% CI: 0.16–0.53, p < 0.0001)]. However, the time to awakening was longer in OFA (MD = 5.64, 95% CI: 0.75–10.53, p = 0.02). No significant difference was found in overall quality of recovery (MD = 13.32, 95% CI: −10.19 to 36.83).

Conclusion/Recommendations: OFA provides better pain control and reduces postoperative nausea and vomiting compared with OBA, though it prolongs awakening time. Its effect on the quality of recovery remains uncertain, highlighting the need for further large-scale trials.

Keywords: Opioid free Anesthesia, Opioid based anesthesia, Post operative pain, Quality of recovery.

SAP 14:

Abstract Title: Comparison of Propofol-Based Total Intravenous anesthetics Versus Volatile anesthetics on Postoperative Cognitive Function and Delirium After Adult Cardiac Surgery: An Updated Systematic Review and Meta-Analysis

Haris Akbar

Objective/Hypothesis: Postoperative neurocognitive disorders including postoperative delirium (POD) and postoperative cognitive dysfunction (POCD) are frequent postoperative conditions related to cardiac surgery. It is uncertain whether the use of propofol-based total intravenous anaesthesia (TIVA) or volatile anaesthetics influences the occurrence of these conditions. This metaanalysis assessed the association between anaesthetic technique and postoperative neurocognitive outcomes in patients undergoing cardiac surgery.

Study Design: Systematic Review and meta-analysis

Materials and Methods: This systematic review and meta-analysis was conducted according to PRISMA guidelines. Electronic searches were performed on PubMed, Google Scholar, and Cochrane Central from inception to August 6, 2025. RCTs with adult patients (>18) undergoing cardiac surgery in which propofol-based TIVA was compared to volatile anesthetics were included. Thestudies that involved non-cardiac surgery or paediatric population, or mixed modes of anaesthetics were eliminated. Three authors independently screened and excluded studies that did not fulfil the inclusion criteria.

Results: This meta-analysis included 17 RCTs involving 7,057 patients. No significant difference was found between anaesthetic approaches in POCD (RR 0.98, 95% CI 0.621.54) and POD (RR 0.98, 95% CI 0.811.18). No difference in cognitive performance at 24 hours tested with the Mini-Mental State Examination. MoCA scores were lower in the propofol group as compared to volatile group at 24 hours. No differences in the secondary outcomes i-e. ICU stay, hospital stay.

Conclusion/Recommendations: TIVA using propofol and volatile anaesthetics have an equivalent postoperative neurocognitive and clinical outcome in adults undergoing cardiac surgery. The existing evidence is not able to show a clinically significant benefit of each of the anaesthetic approaches.

Keywords: Postoperative cognitive dysfunction (POCD), Postoperative delirium (POD), Cardiac surgery, Propofol / Total intravenous anesthesia (TIVA), Volatile anesthesia (VA)

SAP 15:

Abstract Title: Early-Career Oncoplastic Breast Surgeons: Overview of the Learning Curve, Procedural Challenges and the Role of Simulation

Zarka Ahmad

Objective/Hypothesis: To evaluate learning curve in terms of operative exposure, perceived technical challenges, aesthetic improvement milestones, perceived role of simulation and mentorship in early-career oncoplastic breast surgeons.

Study Design: Prospective cross-sectional study

Materials and Methods: A prospective cross-sectional study was conducted from November 2025 to January 2026, using a structured self-administered questionnaire through google forms. The study enrolled 76 early-career oncoplastic surgeons (44 fellows, 32 consultants) from breast (n=69) and plastic surgery (n=7) from multiple institutions. Data was analyzed descriptively using percentage distributions. The survey evaluated operative exposure, perceived technical challenges, aesthetic improvement milestones, perceived role of simulation and mentorship

Results: Most participants (68.4%) had 2-5 years of operative experience in OBS. More than half (52.6%) had independently performed over 50 cases, while 67.1% had assisted in more than 100 procedures. All respondents reported exposure to Level I-III OBS techniques. The most technically demanding steps were perforator identification (91%), surgical marking (88.4%) and glandular mobilization with volume symmetry (79.3%). Level III (volume replacement) procedures were considered the most challenging to master (68.9%). Approximately 80.6% believed that 21-40 supervised cases were sufficient for independent practice, while 76% observed aesthetic improvement after completing 30-50 cases. Simulation was considered highly useful by 45.5%, specifically for flap marking (62.4%) and 89.7% supported its mandatory inclusion in training curricula. Self review outcomes (61.1%), senior mentorship (53.3%), audit and photo review sessions (81%) were perceived as the most beneficial.

Conclusion/Recommendations: . Early-career oncoplastic surgeons report a pronounced learning curve in OBS, especially for advanced techniques. Structured mentorship, simulation-based training and outcome focused audit appear essential to accelerate competency development and optimize cosmesis.

Keywords: Oncoplastic Breast Surgery (OBS), Level III Oncoplastic Procedures, Simulation based training

SAP 16:

Abstract Title: Frequency and Reliance on AI Study Tools and Their Association with Attention and Brainstorming Abilities Among Medical Students. A Cross-sectional Study across Public Medical Colleges in Punjab.

Tauseef Ur Rehman

Objective/Hypothesis: This study aimed to determine the relation of dependence on AI study tools use and attention and brainstorming skills among medical students within public sector medical colleges of Punjab.

Study Design: cross-sectional study Design

Materials and Methods: A cross-sectional study was done among 341 medical students in the first to final year through a structured questionnaire. Attention and brainstorming skills were measured with modified Attention Control Scale and Runco Ideational Behavioral Scale. SPSS version 27.0 software was employed for data analysis. Correlation between AI use variables and other mentioned aspects were tested through chi-square test with significance set at p-value of less than 0.05.

Results: Use of AI is quite frequent, and most students found it helpful and time-saving. The overwhelming majority of the students had average attention (66.3%) and AI brainstorming capacity (58.1%). Greater use of AI had a significant positive relation with higher levels of attention ($p = 0.003$), but the frequency of AI use did not have any significant relation with attention. Abilities in brainstorming had no significant relation with the use and reliance on AI, but the involvement in creative activities had a significant positive relation with the level of AI brainstorming ($p = 0.003$). There is also a significant positive relation between attention and AI brainstorming levels ($p = 0.001$).

Conclusion/Recommendations: study tools were found to be widely used and viewed as effective by medical students. Although the use of AI was not related to either attention or brainstorming skills, a strong positive relationship of reliance on AI with the level of attention was found, implying that the impact of AI on cognition is related to the manner of use of AI and not the frequency of use. Engagement in creative tasks showed a strong positive relationship with brainstorming skills, and a very strong relationship between attention and brainstorming skills was found.

Keywords: Artificial Intelligence (D001185), Attention (D001288), Medical Student (D013337).

SAP 17:

Abstract Title: I laughed so hard - I wet myself: Exploring the Novel horizons in management of female Stress urinary Incontinence

Sara Kalsoom, Faiza Hayat, Rameen Kamal, Ihsanullah, Liaqat Ali

Objective/Hypothesis: To compare the clinical effectiveness, safety and cost effectives of urethral bulking agents and platelet rich fibrin (PRF) in short term management of female stress urinary incontinence

Study Design: prospective cohort study

Materials and Methods: After the approval of IREB, this prospective cohort study that was conducted in department of Urology at Institute of kidney diseases Peshawar from June- July 2024. The total number of 30 patients with SUI based on history, examination and urodynamics were included in the study. We included the patients with intrinsic sphincter deficiency, who were refractory to Kegel exercises, pharmacothepy and physiotherapy. We excluded the patient with urethral hypermobility. The sample was equally divided into 2 groups by simple random sampling using lottery method. Group A, comprised of 15 patients who received urethral bulking agents with hyaluronic acid. The cost of bulking agent was covered in Sehat sahoolat plus program, whilegroup B which comprised of 15 patients were injected 3-4 ml of platelet rich fibrin intra urethral at three points. platelet rich fibrin was prepared from the patient's own blood in hematology laboratory of Hayatabad medical complex. All the preoperative, perioperative and postoperative data till follow up of 6 months were recorded on pre validated incontinence impact questionnaire and was analyzed on SPSS.

Results: The mean age of the patients in group A was 55.5± 9.5 years versus 59.1± 6.1 years ($p>0.05$). 13 patients (86%) in Group A were grand multiparas with simple vaginal deliveries while 12 patients (80%) in Group B were grand multiparas and SVDs($p>0.05$). The mean weight of the patient in Group A was 85.8 ± 3.9 kgs while it was 87.5 ± 7.8 kg. Commercially available bulking agents 3 in number was used as urethral injection at three points in 15 patients. The locally assembled PRF was injected periurethral in 15 patients. The cost of three commercially available bulking agents was 270000 PKR vs 35 PKR only in locally dispensed PRF ($p=0.000$) there were no major intra and post-operative complications noted in both groups ($p>0.05$). Both of the groups were followed up at 3- and 6-month intervals. 3 patients in group A had recurrence of symptoms at 3rd month while 1 patient at 6th month. Similarly in group B, 3 women presented with leakage complaint at 3rd month. 11 patients in Group A and 12 patients in Group B (PRF) remained dry at primary end point of 6 months ($p>0.01$)

Conclusion/Recommendations: Commercially available urethral bulking agents are not superior in clinical effectiveness and safety versus platelet rich fibrin. However, PRF is significantly costeffective in financially constrained countries like Pakistan in management of SUI.

Keywords: Urinary Incontinence, Genuine stress incontinence, Buling agent, PRF

SAP 18:

Abstract Title: COMPARISON OF TWO-LAYER PANCREATOJEJUNOSTOMY WITH AND WITHOUT PANCREATIC DUCT STENT: A PROSPECTIVE STUDY OF POSTOPERATIVE OUTCOMES

Momina Mustafa

Objective/Hypothesis: To compare postoperative outcomes, particularly pancreatic leak and pancreatitis, between two-layer pancreatojejunostomy performed with and without a pancreatic duct stent in patients undergoing pancreaticoduodenectomy.

Study Design: Prospective study

Materials and Methods: This prospective study included 28 patients undergoing pancreaticoduodenectomy with two-layer pancreatojejunostomy (outer layer: pancreatic capsule to jejunal seromuscular with 3-0 Prolene; inner layer: pancreatic duct to jejunal mucosa with 4-0 PDS). Patients were divided into stent group (n = 13) and non-stent group (n = 15). Postoperative outcomes including pancreatic leak/fistula, pancreatitis, mortality, and other complications were recorded over 90 days.

Results: In the stent group (n = 13), postoperative pancreatitis occurred in 1 patient (7.7%), pancreatic leak in 1 patient (7.7%), the non-stent group (n = 15), pancreatic leak was higher (4patients, 26.7%), no pancreatitis occurred, and 1 patient died (6.7%). Operative time, blood loss, and hospital stay were similar between groups.

Conclusion/Recommendations: Two-layer pancreatojejunostomy with a pancreatic duct stent appears to reduce the risk of postoperative pancreatic leak compared with non-stented anastomosis, with only a small risk of pancreatitis. Non-stented anastomoses have higher leak rates but no pancreatitis. Mortality was low and comparable between groups. Selective stent use, based on duct size, pancreatic texture, and surgeon preference, may optimize postoperative outcomes.

Keywords: Pancreatojejunostomy, pancreatic duct stent, pancreatic leak/ fistula

SAP 19:

Abstract Title: Efficacy and safety of Endoscopic Dacryocystorhinostomy in patients with Nasolacrimal duct obstruction: Experience at tertiary care hospital, Peshawar.

Parsa Mustafa

Objective/Hypothesis: To find out the safety and efficacy of Endoscopic Dacryocystorhinostomy in patients with nasolacrimal duct obstruction.

Study Design: Prospective Observational study

Materials and Methods: The prospective non-randomized non-comparative observational study was conducted at Department of Ear Nose Throat and Head & Neck Surgery, Khyber Teaching Hospital, Peshawar, from June 2024 to May 2025 and observed patients of acute/ chronic dacryocystitis, who underwent endoscopic endonasal dacryocystorhinostomy, for the outcome of procedure. Endoscopic dacryocystorhinostomy (DCR), with or without the use of lacrimal intubation, was carried out under general anesthesia. The patients were followed up postoperatively at 1 month and 6 months. Data was analyzed using SPSS 24.

Results: A total 54 eyes of 50 patients (56% males) underwent endoscopic dacryocystorhinostomy, with mean age of 37.3 ± 12.12years. Primary procedures were performed in 90% patients and 10% were revision cases. Unilateral surgeries accounted for 92%, with stents used in 44% of eyes. Meanoperative time was 61.5 ± 40.6minutes. Concurrent nasal procedures were done in 22%.Postoperatively, patients were discharged within/ after 12 hours. At six-month follow-up, both anatomical and functional success were achieved in 96% of patients. Recurrent dacryocystitis occurred in 4% patients. Significant intra-operative bleeding was seen in 6%, with no major complications reported.

Conclusion/Recommendations: Endoscopic DCR is a safe and effective surgical option for nasolacrimal duct blockade.The use of stents is primarily determined by the anatomical site of the obstruction. Bilateral cases can be treated simultaneously, with outcomes and success rates similar to those of unilateral procedures. Keywords: Dacryocystorhinostomy, Endoscopy, Nasolacrimal duct obstruction.

SAP 20:

Abstract Title: Long-term outcome of patients with Cauda Equina Syndrome

Wardah Arshad

Objective/Hypothesis: This study was performed to find possible long-term outcome CES effects on patients.

Study Design: A retrospective case note review was performed on all patients from January 1 2018 to December 31, 2022, with follow-up from each patient on every six months and one year duration

Materials and Methods: To diagnose cauda equina syndrome, we used a reference standard involving acute clinical symptoms consistent with cauda equina syndrome and confirmation through an MRI scan showing compression of the cauda equina nerves, as reported by a Consultant Radiologist. We documented various clinical details, including results from digital rectal examinations assessing sensation and anal tone. Other recorded characteristics encompassed back pain, sciatica, sensory changes in limbs, limb weakness, abnormal lower limb reflexes, urinary symptoms, urinary retention exceeding 500 ml (verified by post-micturition bladder scan or postcatheterization residual), and bowel symptoms like incontinence or constipation. Additionally, we noted the specialty and training level of the surgeons who performed the rectal examination. Ourstudy adheres to the reporting guidelines outlined by the Standards for Reporting of Diagnostic Accuracy (STARD) initiative. “All patients who had undergone surgery for acute CES due to disc prolapse were retrospectively reviewed. All of these patients had a bilateral laminectomy and discectomy. A group who had undergone laminectomy and discectomy for symptomatic large disc herniations (back pain with unilateral sciatica), but without cauda equina syndrome were chosen as controls. These controls had been operated upon by the same surgeons during the same epoch. Hospital notes and MRI scans were scrutinized. In general patients who had short presenting histories with rapidly evolving symptoms, in whom it was felt early decompression may restore function were offered emergency decompression. A validated questionnaire was completed by the patients”.

Results: A total of 76 patients (approximately 76% male and 24% female) referred for MRI scanning with suspected cauda equina syndrome were identified with a mean age of 44 (range 13 – 80). Nearly 29% of the people showed definite cauda equina at the L3-L4 level. This also included some patients with cauda equina issues at the L4-L5 and L5-S1 levels. Around 78% of the people showed definite cauda equina at the L4-L5 level. This also included some patients with cauda equina issues at the L3-L4 and L5-S1 levels. Similarly, 29% of the people showed definite cauda equina at the L5S1 level. This also included some patients with cauda equina issues at the L3-L4 and L4-L5 levels. The overall result shows that most of the cases with CES occurred at L4-

L5 level. The result shows that majority of the causes, about 63.2%, are connected to problems with the disc. The second most common cause, making up 30.3%, involves both disc and stenosis. Lastly, stenosis alone accounts for 6.6% of the total cases. Approximately 2.6% of cauda equina cases are classified as level one, while the majority, about 65.8%, fall into level 2. Level 3 accounts for 26.3% of cases, and there are 5.3% of cases recorded at level 4. In simpler terms, when researchers looked at a group of cases, they discovered that 81.6% of them showed signs of positive saddle anesthesia, while 18.4% had negative saddle anesthesia. This information is relevant to cauda equina syndrome. It was found in the analysis that most of the cases discovered that 81.6% of them showed signs of positive saddle anesthesia, while 18.4% had negative saddle anesthesia. Most of the cases, around 86.8%, displayed issues of dysfunction related to the bowels. Cases, around 98.7%, displayed issues of dysfunction related to the bladder. The findings indicate that 55.3% of individuals are experiencing foot drop as a result of cauda equina syndrome. The result shows that nearly 70% of patients with cauda equina syndrome experience foot impairment problems. The findings also indicate that 86.8% of patients experience problems with their bladder impairment. The analysis revealed that 39.5% of the patients developed AFO (ankle-foot orthosis) due to CES. The analysis also revealed that 90.8% of the patients were experiencing problems with bowel impairment. The result shows, that 18.4% of patients also had hypertension, 11.8% had diabetes, and the majority of patients 69.7% had other accompanying health problems. The overall outcome resulted in around 69% were positive and satisfactory, while around 30% of reported cases did not have satisfactory results after CES surgery.

Conclusion/Recommendations: In this study involving 76 patients suspected of cauda equina syndrome (CES), mostly men (73%) with an average age of 44, it was found that the majority of CES cases occurred at the L4-L5 level of the spine. The main causes were disc-related issues (63.2%). Symptom-wise, most patients experienced positive saddle anesthesia (81.6%), bowel dysfunction (86.8%), bladder dysfunction (98.7%), and foot drop (55.3%). Overall, 69% reported positive outcomes after CES surgery, while 30% did not find the results satisfactory. Many research studies narrate that long-term outcomes revealed that many patients continued to face bladder symptoms, sexual dysfunction, and physical dysfunction after an average follow-up of 43 months. Patients with CES-R (retention) had worse outcomes compared to those with CES-I (incomplete). The study aims to provide valuable data for clinicians throughout the CES diagnosis, surgery, and recovery process, emphasizing the need for a comprehensive approach in managing this complex condition.

Keywords: Keywords: Neurosurgery, cauda equina, lumbar discectomy, quality of life.

SAP 21:

Abstract Title: Posterior Fossa Cerebellar High-Grade Glioma in a 16-Year-Old with atypical presentation mimicking the other differentials: A Rare Case Report

Zeeshan

Objective/Hypothesis: To report a rare case of diffuse pediatric-type high-grade glioma (WHO CNS Grade 4) arising in the cerebellum and highlight the diagnostic value of integrated molecular profiling.

Study Design: Case Report

Materials and Methods: Case Presentation: A 16-year-old female with a history of 1 month of worsening nausea, dizziness, anorexia and postprandial vomiting. There was no history of headache and initial evaluations were normal including neurological and abdominal exam. Brain MRI was performed which demonstrated a 6.2 × 3.4 cm intra-axial mass in the left cerebellar hemisphere, primarily cystic with a solid mural nodule located laterally. SWI observed blooming consistent with hemorrhage, perilesional edema, obstructed hydrocephalus, and inferior cerebellar tonsillar descent. A right frontal external ventricular drain was placed, followed by a left retrosigmoid craniotomy and resection of the cerebellar mass lesion. The presenting symptoms improved within first 24 hours after resection. Post-operative MRI did not detect any residual tumor.Histopathological and Molecular analysis confirmed the diagnosis of a diffuse pediatric-type highgrade glioma, H3-wildtype and IDH-wildtype with MGMT promoter region methylation. There were no post-operative complications and the patient was transferred to neurosurgical ward for supervised monitoring and further treatment.

Results: This case presents a very rare pediatric cerebellar high-grade glioma in a 16-year-old with atypical presentation that radiologically mimicked other tumors. This case also highlights the importance of molecular biopsy for definitive diagnosis and treatment strategy.

Conclusion/Recommendations: Diffuse pediatric-type high-grade glioma should be considered in the differential diagnosis of atypical posterior fossa tumors in children. Integrated histopathological and molecular diagnostics are critical for definitive diagnosis. Reporting rare cerebellar pHGG cases contributes to improved understanding and future therapeutic strategies.

Keywords: Keywords: High Grade Glioma, Pediatric, Posterior Fossa Tumor, Cerebellum

SAP 22:

TITLE: Not Always Appendicitis: Extensive Omental Infarction as a Rare Cause of Acute Abdomen

HIRA ZAHID

OBJECTIVES: The objective of this case report is to highlight extensive omental infarction as a rare cause of acute abdomen mimicking appendicitis, and to emphasise the role of CT and laparoscopy in its diagnosis and management.

MATERIALS AND METHODS: Case report and literature review

CASE REPORT: We report a case of a 52-year-old male who presented with a 2–3 day history of sudden

onset right lower abdominal pain without associated fever or gastrointestinal symptoms. Clinical examination revealed localized tenderness in the right iliac fossa. Initial ultrasound was inconclusive, demonstrating thickened omentum with minimal intra-abdominal fluid. Contrast-enhanced CT scan showed a heterogeneous fat-density lesion with surrounding inflammatory stranding and no evidence of appendicitis, suggestive of omental infarction. The patient was initially managed conservatively; however, due to persistent severe pain and extensive involvement, laparoscopic exploration was performed. Intraoperative findings revealed extensive infarction involving most of the greater omentum. Laparoscopic omentectomy was successfully performed.

CONCLUSION: Although rare, omental infarction should be considered in patients presenting with atypical right lower quadrant pain. CT imaging plays a crucial role in diagnosis, and while most cases can be managed conservatively, extensive disease may necessitate surgical intervention.

KEYWORDS: Omental infarction, acute abdomen, laparoscopy, omental torsion

SAP 23:

TITLE A Hairy Situation: Giant Gastric Trichobezoar Presenting with Severe Weight Loss

HIRA ZAHID

OBJECTIVES: To highlight the clinical presentation, diagnostic challenges, and management of a gastric bezoar in a patient with underlying psychiatric illness, emphasizing the importance of early recognition and multidisciplinary care.

MATERIALS AND METHODS: Case report and literature review

CASE REPORT: We report a case of a 35-year-old female who presented with a 6-month history of epigastric fullness, anorexia, weakness, intermittent vomiting, and significant weight loss of approximately 30 kg. She had no prior comorbidities but had been on long-term antidepressant therapy for 6 years. On examination, she was pale and ill-appearing, with abdominal distension,

diffuse tenderness, and a palpable mass in the left upper quadrant. Partial alopecia was noted. Laboratory investigations revealed anemia (Hb 9 g/dL). Contrast-enhanced CT scan demonstrated a distended stomach containing a heterogeneous intraluminal mass with a mottled gas pattern, suggestive of a gastric bezoar. The patient underwent laparoscopic gastrotomy with successful removal of the mass. Her postoperative course was uneventful, and she was discharged on the third postoperative day. At 14-day follow-up, she remained asymptomatic with well-healed wounds. Psychiatric consultation was advised for further management.

CONCLUSION: Trichobezoars should be considered in patients presenting with chronic upper gastrointestinal symptoms, significant weight loss, alopecia and underlying psychiatric conditions. Early diagnosis using imaging and timely surgical intervention can result in favorable outcomes, while psychiatric evaluation is essential to prevent recurrence.

KEYWORDS: Gastric bezoar, Trichobezoar, Trichotillomania, Gastric obstruction, Weight loss, Laparoscopic gastrectomy

3. Obstetrics and Gynaecology

OGP 1:

Abstract Title: Frequency of genital tuberculosis in women with infertility undergoing laproscopy

Humaira Gul

Objective/Hypothesis: To determine the frequency of genital tuberculosis in women with infertility undergoing laparoscopy Study Design: Cross Sectional study

Materials and Methods: We conducted this study on 118 patients having age 18 to 40 years presenting with infertility who underwent laparoscopy. We determined the frequency of genital tuberculosis in these patients.

Results: RESULTS: Mean age of the patients was 28.76±6.61 years. The frequency of genital tuberculosis in our study was 55 (46.6%).

Conclusion/Recommendations: We conclude that the frequency of genital tuberculosis in women with infertility undergoing laparoscopy in our study was 55 (46%)

Keywords: Infertility, Laparoscopy, Genital tuberculosis, Adhesions

OGP 2:

Abstract Title: Assessment of Knowledge regarding Nutrition Among Antenatal Mothers in a Tertiary Care Hospital, Peshawar

MUHAMMAD DANIAL

Objective/Hypothesis: The aims of the study is to assess the knowledge level regarding nutrition in pregnant women at tertiary hospitals because it will contribute to optimal fetal growth, better outcomes in childbirth, improved perinatal survival, and the potential for better long-term health in both the mother and child.

Study Design: This study utilized a descriptive cross-sectional research design. The research was carried out during a specified timeframe with expectant mothers undergoing regular antenatal services at a tertiary public healthcare facility. The design was chosen to evaluate the current state of nutritional knowledge at one specific moment without implementing any interventions. This study utilized a descriptive cross-sectional research design. The research was carried out during a specified timeframe with expectant mothers undergoing regular antenatal services at a tertiary public healthcare facility. The design was chosen to evaluate the current state of nutritional knowledge at one specific moment without implementing any interventions.

Materials and Methods: The research was conducted at Khyber Teaching Hospital in Peshawar, involving 116 antenatal mothers chosen via proportionate random sampling from three obstetric wards. Data were gathered through a validated, self-reported questionnaire addressing sociodemographic characteristics, obstetric background, and nutrition-related knowledge and attitudes. Nutritional understanding was evaluated through Likert-scale and yes/no questions. A score of 70% or higher was classified as good knowledge. Descriptive statistics were used to analyze the data.

Results: The majority of participants were between 25 and 29 years old (40.5%), had completed primary education (68.1%), and were homemakers (87.9%). In total, 72% (n=83) of expectant mothers showed strong nutritional knowledge, whereas 27% (n=33) exhibited inadequate knowledge. While overall awareness of balanced diets, as well as iron and folic acid consumption, was adequate, deficiencies were noted in understanding specific nutrient needs and advised dietary habits during pregnancy.

Conclusion/Recommendations: The result suggests that knowledge of nutrition among pregnant women during antenatal care should be improved for better pregnancy outcomes. It requires proper coordinated effort between health care provider for maternal and child health outcomes. In conclusion the knowledge of Nutrition among antenatal mother during pregnancy was inadequate. The study might have small size which may limit the generalizability of the finding to the entire population of pregnant women in Khyber teaching hospital (KTH). It is important to a diverse and presentative sample to ensure the result accurately reflects the population. Nutrition education programs should be carried out by medical centers, which should be directed towards

women in rural areas. The governmental, non-governmental organization, health extension workers and other health care provider should emphasize nutrition education programs among pregnant women. Nutrition education, in depth counseling and encourage of pregnant women to take iron supplement and folic acid during their Antenatal Care will improve the nutrition knowledge of pregnant women .

Keywords: Nutritional knowledge, antenatal mothers, pregnancy, anemia

4. Basic Sciences

BSP 1:

Abstract Title: Evolving trends in the antibiotic susceptibility and resistance pattern of Salmonella species isolated from patients with suspected bloodstream infections in a clinical setting

Dr Amina Gul

Objective/Hypothesis: The present study aimed to assess the evolving trends in Salmonella Typhi antibiotic susceptibility and resistance patterns from patients with suspected bloodstream infections in clinical settings.

Study Design: Cross-sectional study

Materials and Methods: The study was conducted on blood culture and susceptibility samples received in the Department of Pathology, Khyber Teaching Hospital, Peshawar. The automated blood culture system VERSATREK was utilized for initial processing of the blood sample. Pathogens were identified as Salmonella based on colony characteristics on Blood agar, MacConkey agar, Salmonella-Shigella agar, biochemical tests, and the API 20E kit. The antimicrobial resistance pattern was mapped using the Disk Diffusion method according to the CLSI M100-Ed33 guidelines, version 23. In total, 1170 blood culture samples were analyzed.

Results: The study revealed that Salmonella Typhi (96%) was the major pathogen, followed by Escherichia coli (2%), Citrobacter spps (1%), and Staphylococcus aureus (1%). Salmonella Typhi demonstrated resistance to Ampicillin (98%), Ciprofloxacin (94%), Chloramphenicol (95%), Ceftriaxone (92%), and Cotrimoxazole (62%). All Salmonella isolates were found sensitive to Meropenem (100%) and Azithromycin (100%). About 56% of the isolates were Extensively DrugResistant (XDR). Gender-wise distribution revealed an infection rate of 62% in male patients and 38% in female patients. Patients <20 years (82%) accounted for the majority as compared to those over 20 years (18%) of age.

Conclusion/Recommendations: Future outbreaks of XDR typhoid are most likely to occur in Pakistan, and it continues to be the dominant circulating strain. While Cotrimoxazole is reemerging with comparatively improved sensitivity, azithromycin and meropenem continue to be available treatment options. The evolving susceptibility pattern of Salmonella isolates demands ongoing surveillance of antibiograms to optimize therapeutic protocols and control the emergence of resistant strains. Public health activities to track and mitigate the spread of XDR S. Typhi should be prioritized in this country.

Keywords: Infection, Antimicrobial resistance, Salmonella, Blood Stream

BSP 2:

Abstract Title: Cutting Costs, Not Quality: A Cost Minimization Analysis of Diabetes Care at Northwest General Hospital and Research Center

Behram Ahmad, Amir Zaman Khan

Objective/Hypothesis: This study aimed to conduct a pharmacoeconomic evaluation and costminimization analysis of commonly used anti-diabetic medications, specifically comparing the costs of branded and generic versions of Empagliflozin and Metformin prescribed at Northwest General Hospital, Peshawar.

Study Design: Cross-sectional study

Materials and Methods: This CMA was conducted by analyzing 202 prescriptions from 105 patients receiving anti-diabetic therapy. Retail prices of both branded and generic drug formulations were collected from local pharmacies. To ensure therapeutic equivalence, a UV spectrophotometric assay was used to compare active pharmaceutical ingredient concentrations between branded and generic products

Results: Metformin 500 mg and Empagliflozin 10 mg were the most commonly prescribed drugs. Generic versions demonstrated comparable bioavailability to branded counterparts. However, substantial cost differences were observed, with generic formulations offering significant savings.The average cost burden per patient was notably lower with generics, suggesting they are a viable and cost-effective alternative.

Conclusion/Recommendations: Generic anti-diabetic medications, when bioequivalent, provide a cost-effective alternative to branded drugs without compromising efficacy. Promoting the use of generics in clinical practice can help reduce the financial burden on patients and improve access to essential diabetes care in resource-limited settings.

Keywords: Pharmacoeconomics, Cost-Minimization Analysis, Type 2 Diabetes Mellitus, Generic Drugs, Branded Drugs

BSP 3:

Abstract Title: Shifting Susceptibility Profiles: Conventional Versus Newer Antibiotics in Recurrent UTIs

Muhammad Saleh Faisal

Objective/Hypothesis: Antibiotics play a crucial role in treating Urinary Tract Infections (UTIs) but due to resistance, the effectiveness of antibiotics is waning. Re-examining old antibiotics is one approach that can address the issue of antimicrobial resistance. The current study aims to evaluate the susceptibility pattern of relatively older antibiotic Co-trimoxazole and its comparison with Levofloxacin, Nitrofurantoin, and Fosfomycin.

Study Design: Cross-sectional study

Materials and Methods: This cross-sectional study was conducted in Mardan Medical Complex and Postgraduate Medical Education Department of Khyber Girls Medical College, Peshawar. Both male and female patients, above the age of 15 years with recurrent uncomplicated urinary tract infections were included in the study. The samples were inoculated onto CLED (Cystine-LactoseElectrolyte-Deficient) Agar, a differential culture medium. The grown bacteria were identified, using Gram staining and BIOMÉRIEUX® API® 10S kits. Minimum inhibitory concentrations (MIC) weredetermined by the Agar dilution method; as per standard protocol. The results were compared among Co-trimoxazole, Levofloxacin, Nitrofurantoin, and Fosfomycin using statistical tests.

Results: A total of 680 samples were received, of which 158 samples were culture-positive. The isolated organisms were E. coli (74.1%), Klebsiella (10.8%), Pseudomonas (5.1%), Enterococci (6.3%), Proteus species (2.5%), and Citrobacter (1.3%). Based on MIC analysis, 77.2% of isolates were found to be sensitive to Co-trimoxazole, 52.5% to Levofloxacin, 86.7% to Nitrofurantoin, and 90.5% to Fosfomycin. When comparing antibiotics, Co-trimoxazole displayed significantly higher effectiveness against the isolates compared to Levofloxacin (p-value 0.004). However, in comparison to Nitrofurantoin and Fosfomycin, Co-trimoxazole exhibited lower effectiveness, with respective p-values of 0.000 and 0.007.

Conclusion/Recommendations: In the study population, bacterial isolates demonstrated significantly greater susceptibility to co-trimoxazole than to levofloxacin; however, its effectiveness remained lower than that observed for nitrofurantoin and fosfomycin. In accordance with established guidelines recommending avoidance of empirical antibiotics with resistance rates exceeding 20%, the observed 22.8% resistance to co-trimoxazole limits its suitability as an empirical treatment option.

Keywords: Urinary tract infections, Drug resistance, Culture and sensitivity

BSP 4:

Abstract Title: Impact of Ramadan Fasting on Sleep Quality, Somnolence, and Cognitive Performance in Female Medical Students: A Prospective Longitudinal Study

Sarah Shahid

Objective/Hypothesis: To evaluate the effect of Ramadan fasting on sleep quality, daytime somnolence, and memory performance in female medical students

Study Design: Prospective longitudinal observational study

Materials and Methods: This was a longitudinal observational study conducted in the public sector Medical College in Peshawar during the month of Ramadan. Purposive sampling was used, and 60 female medical students of first year to final year were enrolled. Data were gathered at three pivotal time points: baseline (one week before Ramadan), mid-Ramadan, and post-Ramadan. A well-structured online questionnaire was used to collect the data. Sleep quality was evaluated using the Pittsburgh Sleep Quality Index (PSQI), which consists of seven components, each scored from 0 to 3, resulting in a global score between 0 and 21. daytime somnolence was assesed with Epsworth Sleepiness Scale and memeory with a recall test. Hydration status was determined with the validated WUT criteria, while bladder function was assessed using the validated OAB-V8questionnaire. Bladder function was measured by the validated OAB-V8 questionnaire. The collected data were analysed through SPSS software.

Results: Preliminary analysis revealed that the majority of participants experience an altered sleep pattern with a delay in bedtime and a decrease in total sleep duration. The mean PSQI score was elevated, indicating the majority of students were poor sleepers. Common disturbances included difficulty falling asleep, nighttime awakening, and daytime dysfunction. Daytime somnolence (ESS) increased mid-Ramadan and improved after Ramadan. Memory performance showed a mild dip mid-Ramadan, with full recovery post-Ramadan. Self-reported hydration was frequently suboptimal, with the majority reporting darker urine colour. Some students reported an increase in urinary frequency and nocturia.

Conclusion/Recommendations: Ramadan fasting temporarily worsens sleep quality and daytime alertness, with a mild dip in memory performance. All measures returned to baseline after Ramadan, suggesting these effects are transient and reversible RECOMENDATIONS Encourage consistent sleep schedules during Ramadan. increased sleepiness. Promote short daytime naps to counter Advise limiting caffeine and heavy meals close to bedtime. physical activity to maintain alertness. Support light Provide study planning guidance for students during fasting.

Keywords: Ramadan fasting, sleep patterns, Somnolence, Cognitive Performance, female medical students

BSP 5:

Abstract Title: Phenotypic and Genotypic Characterization of H.pylori isolates in patients with dyspepsia visiting Tertiary care hospitals of Peshawar

Momena Ali

Objective/Hypothesis: 1. To identify H.pylori from gastric biopsies 2. To perform antibiotic susceptibility testing

Study Design: Cross sectional

Materials and Methods: Gastric biopsies from symptomatic patients were cultured for H. pylori. DNA was extracted from 27 confirmed isolates and quantified by NanoDrop. Molecular confirmation targeted the 16S rRNA gene using established primers. Antibiotic susceptibility testing was carried out by Kirby Baur disk diffusion method. Data were analyzed descriptively and associations between prior antibiotic exposure and resistance were assessed.

Results: Molecular confirmation succeeded for the majority of cultured isolates. Markedly high resistance levels were observed to metronidazole and clarithromycin while amoxicillin resistance remained uncommon. Prior macrolide exposure was associated with increased likelihood of clarithromycin resistance.

Conclusion/Recommendations: H. pylori isolates from this tertiary care setting demonstrate clinically significant resistance to commonly used antibiotics, undermining empirical triple therapy. Routine susceptibility testing, molecular-guided therapy and antimicrobial stewardship are recommended to improve eradication rates and limit spread of resistance. Larger, regional multicentre surveillance and incorporation of molecular resistance testing into diagnostic workflows are urgently warranted.

Keywords: Helicobacter pylori, Drug Resistance, Bacterial, Antibiotic stewardship

BSP 6:

Abstract Title: ANTIBIOTIC RESISTANCE PATTERNS AND EMPIRICAL THERAPY OUTCOMES IN CLINICAL SPECIMENS FROM QUETTA, PAKISTAN: A CROSS-SECTIONAL SURVEILLANCE STUDY

Mohsin Ali hassni

Objective/Hypothesis: Globally, antimicrobial resistance is a global threat, especially in developing countries like Pakistan, where AMR is rising because many are not able to afford proper treatment. This study analyzes a region surveillance with low data available, prevalence of bacterial pathogens, and antibiotic susceptibility in specimens from Quetta, Pakistan

Study Design:

A retrospective cross-sectional study was conducted in the tertiary care hospitals of Quetta from January to October 2025 total of 615 specimens were analyzed during our study, following CLSI and manufacturer guidelines for culture and sensitivity testing. The study focused on blood and urine samples submitted for culture and sensitivity testing

Materials and Methods: Sample Size and SelectionA total of 615 specimens were analyzed and included in our study.. Inclusion criteria were: (1) specimens provided for routine bacterial culture, and (2) availability of complete demographic and antibiotic susceptibility details.3. Fungal samples were excluded from this study.Microbiological AnalysisCLSI guidelines were followed in all analysis procedures. Automated blood culture analysis was used for blood cultures, and urine cultures weremanually plated on blood and MacConkey agar. All biochemical tests were performed for identification with API strips, where necessary, for analysis of the organismAntibiotic Susceptibility TestingInterpretation was done following CLSI guidelines 2023.Kirby-Bauer disk diffusion method was used for Antibiotic susceptibility.Empirical Therapy AssessmentEmpirical therapy success was defined as initial antibiotic treatment matching the sensitivity profile of the isolated organism. Mismatch was recorded when the prescribed antibiotic showed resistance. Data were extracted from patient records and prescription logs.Data AnalysisData analysis was done using SPSS and RStudio. Ethical ConsiderationsBolan Medical College Hospital provided ethical approval for your study

Results: Among 615 specimens, 315 were blood samples and 300 were urine samples. Out of them, 221 (36%) showed positive growth. Among positive organisms, Pseudomonas aeruginosawas the maximum often isolated organism (28.1%), followed by Acinetobacter spp.(20.4%), Staphylococcus aureus(17.2%), Escherichia coli(14.5%), Salmonella typhi(10.9%), and coagulase-negative staphylococci (9.0%). Drug resistance washigh in many medicines. Substantial resistance was confirmed in Pseudomonas aeruginosa following to Ciprofloxacin (71%) and Ceftriaxone (68%), while retaining sensitivity to Imipenem (82%)

and Piperacillin-Tazobactam (76%). Acinetobacter spp.The moderate sensitivity to Colistin (65%) and poor susceptibility to third-generation cephalosporins were observed. E. coli has shown increased high resistance to Ampicillin (88%) and Ciprofloxacin (72%), but remained sensitive to Nitrofurantoin (75% and Imipenem (70%). S. aureusdisplayed 60% resistance to Oxacillin, indicating a high prevalence of MRSA, while Vancomycin retained 92% efficacy. Empirical therapy was successful in 96 cases (43.3%), where the initial antibiotic matched the sensitivity profile, while 125cases (56.7%) required changes due to resistance. Mismatches were most frequent in infections caused by Acinetobacter spp.and Pseudomonas aeruginosa. Age-wise, patients over 60 years exhibited higher resistance rates, particularly for E. coliand Acinetobacter spp., whereas no statistically significant differences were observed between male and female patients ($p > 0.05$).

Conclusion/Recommendations: This study highlights the alarming prevalence of antimicrobial resistance among key bacterial pathogens in Quetta, Pakistan. The high resistance rates observed in Pseudomonas aeruginosaand Acinetobacter spp., coupled with a 56.7% empirical therapy mismatch rate, underscore the urgent need for localized antibiograms and revised treatment protocols. These findings align with national and global AMR trends and emphasize the importance of regional surveillance in guiding clinical decision-making. Strengthening antimicrobial stewardship, improving laboratory capacity, and integrating resistance data into prescribing practices are essential steps toward mitigating the AMR crisis in Pakistan and similar low-resource settings

Keywords: Keywords: Antimicrobial resistance, Empirical therapy, Antibiotic susceptibility,Pseudomonas aeruginosa, Acinetobacter spp.

BSP 7:

Abstract Title: Clinico-Pathological Spectrum and Demographic Profile of Adult Renal Tumors at a Tertiary Care Hospital in South Punjab, Pakistan

Sahrish Haji

Objective/Hypothesis: To determine the prevalence of benign and malignant renal tumors and to evaluate their demographic distribution and clinicopathological characteristics (size, grade, stage, and histology) in an adult population

Study Design: This retrospective, cross-sectional study was conducted at the Multan Institute of Kidney Diseases from January 2019 to June 2025.

Materials and Methods: This retrospective, cross-sectional study was conducted at the Multan Institute of Kidney Diseases from January 2019 to June 2025. Comparised a total of 329 adult patients (≥18 years) who underwent nephrectomy for renal masses were analyzed. Parameters included age, sex, tumor size, histologic subtype (WHO classification), grade (WHO/ISUP), and pTNM stage. Statistical analysis was performed using SPSS

Results: Of the 329 cases, a male predominance was observed (55.6% male and 44.4% female), with a mean age of 54.9 ±12.4 years. Malignant tumors accounted for the vast majority, with RenalCell Carcinoma (RCC) comprising 77.8% of cases. The most common histological subtypes were Clear Cell RCC (58.4%), followed by Papillary RCC (18.2%), and Chromophobe RCC (5.8%). Benign tumors, primarily Oncocytoma and Angiomyolipoma, were rare (4.8%). The mean tumor size was 7.1± 4.5 cm, with 32.2% of tumors exceeding 10 cm. Aggressive subtypes like Sarcomatoid RCC (3.3%) were associated with higher age (mean 60.4 years), larger tumor size (mean 9.1 cm), and higher WHO/ISUP grades and pT3a staging revealed as a common radical presentation.

Conclusion/Recommendations: Clear cell RCC is the most prevalent adult renal tumor in South Punjab, typically presenting in the fifth and sixth decades of life. The high frequency of large tumor sizes and advanced pathological stages suggests a trend toward delayed presentation in this region. These findings underscore the need for earlier diagnostic intervention and specialized histopathological evaluation for accurate prognostic stratification.

Keywords: Renal Cell Carcinoma, Nephrectomy, Histopathology, RCC, WHO/ISUP Grading ,Staging system.

BSP 8:

Abstract Title: Fallopian Tube As Site Of Origin Of Ovarian Carcinoma - A Paradigm Shift

Zeshma Ijaz Khan

Objective/Hypothesis: To describe a rare case of fallopian tube-origin mucinous carcinoma supporting the paradigm shift in the pathogenesis of ovarian carcinoma

Study Design: Case report

Materials and Methods: A 17-year-old female, married for nine months, presented to the gynaecology department at Northwest General Hospital and Research Centre with complaints of primary infertility. She had no significant past medical history, including hypertension, diabetes, prior surgeries, or medication use. On examination, her physical findings were unremarkable. Laboratory investigations revealed hemoglobin of 10 g/dL, total leukocyte count of 8.85, platelet count of 550, hematocrit of 33%, and mean corpuscular volume of 74 fL. Liver function tests were within normal limits. Pelvic ultrasonography demonstrated a 4.1 × 2 cm complex mass with moderate ascites. A CT scan of the abdomen and pelvis confirmed a complex cyst in the right ovary, associated with omental caking, peritoneal deposits, and moderate ascites. The preoperative CA-125 level was markedly elevated (>1000 U/mL; normal <35 U/mL). Following detailed

counseling, a staging laparotomy was performed. Intraoperative frozen section analysis revealed atypical cells and glandular structures consistent with adenocarcinoma. Intraoperatively, the uterus was normal in size, a 4–5 cm complex mass was noted in the right ovary with an intact surface, and the left ovary appeared normal. Both fallopian tubes were enlarged. Peritoneal seedlings were present on the uterine surface and along the lateral abdominal wall. Approximately 5 liters of straw-colored ascitic fluid were drained. Total abdominal hysterectomy with bilateral salpingo oophorectomy and infracolic omentectomy was carried out. The surgical specimen included the uterus with the attached left ovary and fallopian tube, while the right ovary, right fallopian tube, and omentum were received separately. Nodular thickening was observed in both mesosalpinges, and both fallopian tubes were swollen. The right mesosalpinx nodule measured 3 × 3 × 1.5 cm, and the left measured 2 × 1.5 × 1 cm. The right ovary was ruptured, revealing a cystic cavity filled with hemorrhagic material. Histopathological examination demonstrated bilateral mucinous adenocarcinoma involving both fallopian tubes, with prominent mucinous granulomatous reaction, giant cells, and areas of necrosis. Sheets of atypical cells with markedly vacuolated cytoplasm were identified. Tumor involvement was noted on the serosal surfaces of both ovaries, bilateral mesosalpinx nodules, and the serosal and subserosal layers of the uterus and cervix. The omentum also showed tumor infiltration.

Results: Primary fallopian tube carcinoma (PFTC) is a rare gynecological malignancy with a poor prognosis. Globally, only about 1,500 - 2,000 cases have been documented in the

literature. Most patients are postmenopausal women, with a median age at diagnosis of approximately 52 years, and the peak incidence occurring between 60 and 64 years (reported age range: 17–88 years). In contrast, the present case involved an exceptionally young patient aged 17 years. The exact etiology of PFTC remains unclear. However, it has been associated with chronic tubal inflammation, infertility, endometriosis, germline BRCA1 and BRCA2 mutations, and certain occupations such as artistic work, shop work, hairdressing, nursing, and clerical jobs, which appear to confer an increased risk. Our patient belonged to a tribal community, had been married for one year, had no children, and presented with infertility. Clinical manifestations of PFTC are often nonspecific. Approximately 50% of patients present with peri- or postmenopausal vaginal bleeding. The classic Latzko's triad - intermittent profuse watery or amber-colored vaginal discharge, pelvic pain relieved by the discharge, and a pelvic or abdominal mass - is observed in only about 15% of cases. The most common presenting symptom is abdominal pain, which may be colicky due to forced tubal peristalsis or dull as a result of tubal distension. None of these symptoms were observed in our patient, and pelvic examination did not reveal any abnormalities. Preoperative diagnosis of PFTC is extremely uncommon, with most cases being identified intraoperatively or on histopathological examination, as occurred in this case. In our patient, serum CA-125 levels were markedly elevated (>1000). Although CA-125 is not diagnostic, it is a useful tumor marker for monitoring treatment response and disease recurrence. Elevated pretreatment CA-125 levels have been reported in over 80% of patients with PFTC. Imaging modalities such as ultrasonography, computed tomography (CT), and magnetic resonance imaging (MRI) are routinely used in the evaluation of gynecological malignancies. However, their ability to specifically diagnose tubal carcinoma is limited, as imaging findings are nonspecific and may resemble tubo-ovarian abscesses or ovarian tumors. Certain imaging features—such as a sausage-shaped tubal mass separate from the ovary, a multinodular mass with a cogwheel appearance, or a cystic mass with mural nodules—may provide diagnostic clues. On CT or MRI, PFTC may appear as a small lobulated solid mass, while MRI is superior to CT in assessing extra-tubal tumor infiltration. The ampulla of the fallopian tube is the most common site of origin for PFTC, and bilateral involvement is reported in 10–20% of cases. Approximately 50% of tubal carcinomas are serous in type, while the remainder include endometrioid, transitional, undifferentiated, or other rare epithelial subtypes. Mucinous adenocarcinoma of the fallopian tube is exceedingly rare, with only four cases previously reported. Both benign and malignant mucinous tumors are uncommon in this location. In the present case, a poorly differentiated mucinous adenocarcinoma extensively involved both fallopian tubes, with spread to the serosal surfaces of

both ovaries, uterus, cervix, and mesosalpinx. Based on the traditional approach, the fallopian tubes were designated as the primary site due to the predominance of tumor burden, while ovarian involvement was limited to the serosal surface. Although emerging evidence challenges this traditional classification, mucinous carcinoma arising from the fallopian tube remains poorly studied. Experimental studies have demonstrated that genetically modified fallopian tube epithelial cell lines can give rise to poorly differentiated mucinous carcinoma, suggesting the fimbrial end of the tube as a potential origin. The primary mode of spread of

tubal carcinoma is transcoelomic dissemination, similar to epithelial ovarian cancer, with additional routes including contiguous extension and hematogenous spread. PFTC is staged according to the International Federation of Gynecology and Obstetrics (FIGO) system used for epithelial ovarian cancers, based on surgical findings at laparotomy. The standard treatment is cytoreductive surgery, including total abdominal hysterectomy, bilateral salpingo-oophorectomy, omentectomy, and pelvic and para-aortic lymphadenectomy, regardless of stage. This is followed by adjuvant platinum-taxane-based chemotherapy. Patients undergoing surgery followed by chemotherapy have demonstrated a median three-year progression-free survival rate of approximately 67%. The role of postoperative radiotherapy remains uncertain.

Conclusion/Recommendations: Primary fallopian tube carcinoma is an exceptionally rare gynecological malignancy that predominantly affects postmenopausal women. Owing to its silent clinical course and nonspecific presentation, preoperative diagnosis is challenging, and the disease is often identified intraoperatively or on histopathological examination. This case underscores the importance of maintaining a high index of clinical suspicion, as PFTC may occasionally present in unusual and atypical circumstances, including in very young patients.

Keywords: Fallopian tube, mucinous adenocarcinoma, primary ovarian

BSP 9:

Abstract Title: Congenital Dyserythropiotic Anemia Type 1: A Rare Form of Anemia

Palwasha Ijaz

Objective/Hypothesis: To emphasize the importance of considering Congenital Dyserythropoietic Anemia Type 1 in patients presenting with chronic anemia and ineffective erythropoiesis.

Study Design: Case report

Materials and Methods: Case: A three and half years old male child of consanguineous decent presented with a history of severe pallor,lethargy and fatigue since three months of age. Past history: Parents of the patient gave history of multiple blood transfusion since three months of age. General physical and systemic review: On general physical examination, the child appeared pale and lethargic along with sighs of iron overload like hyperpigmentation of the skin were present. There was no hepatospleenomegaly and otherwise systemic review was unremarkable. Clinically the child was evaluated for anemia. All routine blood investigations were done. A written informed consent was signed from the guardian (I-e father) for the entire process. Baseline Investigation: Complete blood count: Serum ferritin: Serum ferritin of the child was done which was more than 500 ng/ml showing iron overload. Bone marrow Aspiration: On bone marrow aspiration there is Erythroid hyperplasia and the morphology suggests CDA type1.

Results: CDA type 1 is a rare complex disorder which requires a multidisciplinary approach for its early diagnosis and management. Early detection and correct treatment plan are crucial to prevent complications and improve life expectancy of the patient. Further research is needed on its various types and effective exploration to improve the treatment plan for better outcome of the patients.

Conclusion/Recommendations: CDA type 1 is a rare disorders characterised but defective red blood cell production leading to anemia and iron overload. The pathophysiology involves abnormal erythroid development . Management of this disease typically includes transfusion of blood to improve the anemia problem along with this a close check is needed to be kept on iron levels and if needed chelation therapies are advised. Role of interferon alpha has also helped in the treatment management of the disorder. It has shown very promising results by improving the hemoglobin level and decreasing the need for transfusion. Along with all the treatment options mentioned bone marrow. Transplant is the ultimate option.

Keywords: Anemia, Congenital Dyserythropoietic, Dyserythropoiesis, Erythropoiesis

BSP 10:

Abstract Title: MACHINE LEARNING-BASED PREDICTION OF CLIMATE-RELATED PUBLIC HEALTH RISKS: A MULTI-MODEL ANALYSIS OF GLOBAL CLIMATE INDICATORS

Muhammad Ali Bin Shahid

Objective/Hypothesis: Climate change also presents a great danger to the health of the population due to events like extreme weather, hot weather, and degradation of the environment. To prevent health risks associated with the climate, it is necessary to make appropriate predictions of climate-related health risks and allocate resources. The purpose of the proposed research is to design and compare machine learning models to forecast global climate indicators as predictors of public health risks, determine the most important predictors of vulnerability, and develop a risk assessment system that is practical.

Study Design: This study was designed as a retrospective, multi-country analytical study using secondary data collected over a 23-year period (2000–2023). The aim was to explore how major climate indicators can predict public health vulnerability through the application of multiple machine learning models.Data were compiled for 15 countries, generating a total of 1,000 observations. The study focused on key global climate indicators including mean temperature, CO_2 emissions, precipitation levels, renewable energy usage, forest area coverage, and the frequency of extreme weather events These variables were selected based on their established relevance to environmental stability and population health risks. The design incorporated structured data preprocessing, including cleaning, normalization, and feature engineering to enhance predictiveaccuracy. Both regression and classification approaches were applied. Regression models (Linear Regression, Random Forest, and Gradient Boosting) were used to estimate continuous climaterelated risk patterns, while classification models (Logistic Regression, Random Forest, and Gradient Boosting) were used to categorize regions into defined risk levels.Hyperparameter tuning was performed using GridSearchCV to optimize model performance and ensure robustness. Model evaluation relied on standard performance metrics: R^2 and RMSE for regression models, and accuracy and F1-score for classification modelsAdditionally, feature importance analysis was conducted to identify which climate indicators contributed most significantly to risk prediction. The final output of the study design was the development of a practical risk stratification framework categorizing regions into low-, medium-, and high-risk groups to support public health planning and early warning strategies.

Materials and Methods: A sample size consisting of 1,000 observations in 15 countries (20002023) was used. The main variables were the mean temperature, the emission of CO 2, precipitation, the use of renewable energy, the size of forests, and extreme weather patterns. Preprocessing of data and engineering of features were done. Hyperparameter tuning with the help of GridSearchCV was

used to develop regression (Linear Regression, Random Forest, Gradient Boosting) and classification models (Logistic Regression, Random Forest, Gradient Boosting). R 2, RMSE, accuracy and F1-score were used to assess model performance. The analysis of the importance of features revealed the most significant climate indicators. Results: Gradient Boosting fitted the regression (RMSE: 4.21) best, whereas the Logistic Regression had the highest classification (38.5%). The use of renewable energy (24.6) and the extent of forests (23.3) had the highest predictive power on extreme weather events. The patterns of population density and temperatures contributed as well. The system classified the regions into low, medium and high-risk levels that offered practical information on the intervention of the health of the people.

Conclusion/Recommendations: The machine learning is able to recognize climate indicators related to health hazards in the population and help to provide early warnings. The vulnerability to climate and the health of the population can be addressed by the promotion of renewable energy and forests conservation. Future research ought to include direct health outcomes and region specific data to enhance the predictive power

Keywords: Machine Learning, Climate Change, Public Health Risk Prediction, Extreme Weather Events, Climate Indicators, Renewable Energy, Forest Cover, Risk Assessment, Gradient Boosting, Global Health Vulnerability

BSP 11:

Abstract Title: Vitamin D Levels: Newly Diagnosed Pulmonary Tuberculosis Patients, Contacts and Rifampicin Resistant TB

Muhammad Bilal

Objective/Hypothesis: This study aim to determine vitamin D deficiency in newly diagnosed nonresistant pulmonary tuberculosis (NR-TB) patients, rifampicin resistant tuberculosis (RR-TB) patients and their household contacts (HC) in Pakistan.

Study Design: comparative cross-sectional study

Materials and Methods: Serum samples from Smear/ GeneXpert positive NR-TB patients (n=29), RR-TB patients (n=26) and their HC (n=27) were obtained. By ELISA, serum 25(OH)-vitamin D3 was determined.

Results: Mean age (years) of HC, NR-TB patients and RR-TB patients were 31.89 years, 32.72 years and 33.0 years respectively. 11.1% HC, 3.4% NR-TB patients and 15.4% RR-TB patients were smokers. Mean BMI of HC, NR-TB patients and RR-TB patients was 21.515 kg/m2, 20.85 kg/m2 and 20.373 kg/m2 respectively. 3.7% of HC and 13.8% of TB patients were underweight. The prevalence of vitamin D deficiency was higher in RR-TB patients (84.6%) than in NR-TB patients (75.9%) andHC (59.3%). Mean 25(OH)-D3 of RR-TB patients (16.47 ng/ml) was significantly lower than NR-TB patients (22.50 ng/ml) and HC (29.73 ng/ml). Severe vitamin D deficiency was observed in 38.5% (10/26), 10.3% (3/29), and 7.4% (2/27) of RR-TB patients, NR-TB patients and HC respectively.

Conclusion/Recommendations: High prevalence of vitamin D deficiency was observed among TB patients compared to HC with more severe deficiency among RR-TB patients. Supplementation in drug-sensitive TB cases and their contacts may help strengthen immunity and reduce the TB development and risk of resistance. Keywords: Tuberculosis; Rifampicin resistant TB; Vitamin D deficiency; Pakistan.

BSP 12:

Abstract Title: Exploring the Link Between Problematic Internet Use, Quality of Life, and Academic Outcomes in Medical Education

Tayyab Nawaz Khan

Objective/Hypothesis: To determine the impact of problematic internet use [PIU] and quality of life on academic performance

Study Design: The study was conducted through a cross-sectional study design using a nonprobability sampling technique in which the undergraduate medical students of Peshawar were targeted. The study was conducted and data was collected at various medical colleges of Peshawar [i.e. Kabir Medical College, Sardar Begum Dental College, Khyber Medical College, Rehman Medical College, Northwest School of Medicine] from Feb 2025 to August 2025 on only those students that included our inclusion criteria that is Undergraduate medical students and students that are willing to be part of our study. Post graduate medical students and Allied Science students were excluded in our study.A total 112 sample was collected from the participants by mean of questionnaire

Materials and Methods: Data was collected through means of a questionnaire. A standardized literature-based questionnaire has been developed for data collection. It was available in Englishlanguage. Questionnaire contained questions on demographics, for the predication of PIU we used a tool PIUQ-SF-6 [Problematic Internet Use Questionnaire Short Form] which contain 6 question basic on the Likert scale [item 2 &6] obsession [item 1 & 5] neglect [item 3 & 4] control disorder. Self-report WHOQOL-BREF was considered. The WHOQOL-BREF is a 26-item questionnaire that assesses quality of life across four domains: Physical Health Psychological Health Social Relationships Environment It is a shorter version of the WHOQOL-100 and is widely used in research due to its brevity and reliability. For academic performance academic performance scale[12] was use which consist of eight questions which categorize in three section excellent performance , good performance and Poor Performance. Student with total sum of question and get score in range 33-40 are considered excellent performance, from range 25-32 considered as good performance and from range below 17-24 considered as Poor performance. The cornbach alpha for all three scale lie in range of 0.65-0.7 which is satistically good

Results: The mean age of the participants was 20.91±1.819. The mean scores for the PIU components—neglect, obsession, and control—were 1.9464±.80359, 1.5714±.75593, and 1.8661±.78838, respectively. Most of the participants from the first year of the medical school. The student show good academic performance 57.1% in their medical school. The mean value for environmental domain2.4464±.53422 is higher because from the support from the surrounding and

least mean value for physical domain2.3304±.54340 is due to several reason due to overuse of mobile, academic stress which may lead to different disease like obesity and other health problem.

Conclusion/Recommendations: The findings of this study suggest that medical students in Peshawar demonstrate a moderate level of problematic internet use, which has implications for their physical health, psychological well-being, and academic performance. The significant association observed with environmental factors and academic outcomes highlights the role of surrounding support systems. Promoting balanced and mindful internet use appears essential for safeguarding students' academic success as well as their overall health.

Keywords: Internet use, Quality of life, Academic performance

BSP 13:

Abstract Title: : In hospital mortality and Potential risk factors of acute coronary syndrome in diabetic and non diabetics at KTH

Adeela Mustafa

Objective/Hypothesis: To compare in hospital mortality and identify risk factors for ACS in diabetic versus non diabetics at KTH

Study Design: Retrospective cross sectional study

Materials and Methods: ACS diabetic and non diabetic patients data extracted from hospital records. Statistical analysis included chi square test and descriptive summaries.

Results: Overall in hospital mortality was 8% with no significant difference between diabetic and non diabetics. NSTEMI predominated. Hypertension was paradoxically associated with lower mortality in diabetics

Conclusion/Recommendations: The study found that in hospital mortality was not different between diabetic and non diabetic patients with longer hospital stay associated showed increased mortality in diabetics

Keywords: Acute coronary syndrome, Mortality, Diabetics , non Diabetics

5. Students Research

SP 1:

Abstract Title: KNOWLEDGE AND IMPACT OF CASE-BASED LEARNING ON THE ACADEMIC PERFORMANCE OF UNIVERSITY STUDENTS.

Dr Usama Narejo

Objective/Hypothesis: The main objective of this study was to assess the impact of Case-Based Learning (CBL) as an instructional approach in fostering academic achievement, strengthening clinical reasoning abilities, and promoting active learning engagement among medical students at Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro.

Study Design: descriptive cross-sectional survey

Materials and Methods: A cross-sectional analytical survey was conducted among 134 male undergraduate medical students at LUMHS, Jamshoro, selected through simple random sampling. Following informed consent, data were collected via a structured Google Form and analyzed using SPSS version 20.

Results: A total of 134 medical students, predominantly aged between 15 and 30 years, participated in the study. The majority (64.18%) demonstrated moderate awareness of Case-Based Learning (CBL), while 14.93% and 11.94% reported high and very high awareness, respectively. Only 8.96% indicated poor or very poor awareness. Regarding academic impact, 50.75% of studentsagreed and 29.85% strongly agreed that CBL improved their academic performance, whereas 16.42% remained neutral and 2.99% disagreed. Overall, 94.03% of respondents expressed satisfaction with the CBL approach, with satisfaction notably higher among those with greater exposure to CBL sessions. These findings highlight a strongly positive perception and acceptance of CBL as an effective learning strategy among medical students.

Conclusion/Recommendations: Medical students viewed Case-Based Learning positively, recognizing its value in improving academic performance and clinical reasoning. Broader curricular integration and faculty training are essential to maximize its impact, fostering competent, analytical, and practice-ready future physicians.

Keywords: Case-Based Learning, Medical Education, Academic Performance, Clinical Reasoning, Student Satisfaction, Active Learning Strategies.

SP 2:

Abstract Title: Vitamin E vs Ursodeoxycholic Acid in Nonalcoholic Fatty Liver Disease: A Systematic Review and Meta-analysis

Hiba Abeer

Objective/Hypothesis: To systematically compare the relative efficacy of vitamin E against UDCA in improving the biochemical and histological outcomes among adults with NAFLD or nonalcoholic steatohepatitis (NASH).

Study Design: A systematic review and meta-analysis

Materials and Methods: In accordance with the PRISMA 2020 guidelines, a comprehensive systematic search was performed across PubMed, the Cochrane Library, and relevant local databases from inception to August 2025. Randomized controlled trials (RCTs) enrolling adults (≥18 years) with a diagnosis of non-alcoholic fatty liver disease (NAFLD) or non-alcoholic steatohepatitis (NASH) and directly comparing vitamin E (at any dose or duration) with ursodeoxycholic acid (UDCA) were eligible for inclusion. The primary outcomes assessed were liver biochemical parameters, including alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), bilirubin, albumin levels, and fibrosis. Data were pooled using random-effectsmeta-analysis models to estimate mean differences (MDs) with corresponding 95% confidence intervals.

Results: Out of 174 identified records, 5 RCTs met the inclusion criteria, with 3 providing quantitative data (n = 60–250 participants; treatment duration: 8 weeks–24 months). Vitamin E predominantly decreased ALT levels compared to UDCA (MD = −12.61 U/L; 95% CI, −20.38 to −4.85; p = 0.001; I^2 = 88%), indicating that it enhanced hepatocellular integrity. It had not significantly reduced AST levels to statistical significance but still favoured vitamin E (MD = −2.45 U/L; 95% CI −5.20 to 0.30; p = 0.08; I^2 = 22%). No change in ALP (MD = −6.20 U/L; p = 0.13). Secondary outcomes, including bilirubin and fibrosis, showed no significant improvement.

Conclusion/Recommendations: Vitamin E shows greater efficacy than UDCA in reducing ALT. Vitamin E has shown a profound effect in reducing liver inflammation and oxidative stress–related injury among NAFLD/NASH patients. However, it's inconclusive to decide its effects on ALP, fibrosis, and AST. As the sample size was small, along with heterogeneity, and a restricted number of trials, further large-scale, high-quality RCTs with standardized dosing are needed to confirm these findings. This will also provide clarification of the role of Vitamin E in fibrosis regression and its broader clinical effects.

Keywords: NAFLD, NASH, MASLD, vitamin E, ursodeoxycholic acid, meta-analysis, liver enzymes, oxidative stress

SP 3:

Abstract Title: A Prospective Longitudinal Study on the Impact of Ramadan fasting on sleep, Alertness and Memory in Female Medical Students.

Ansa Nawafla Batool

Objective/Hypothesis: To evaluate the effect of Ramadan fasting on sleep quality, daytime somnolence and memory performance in female medical students .

Study Design: This study was designed as a Prospective Longitudinal Study to access the impact of Ramadan fasting on the same participants at three different time points.

Materials and Methods: STUDY SETTING: this study was conducted in Khyber Girls Medical College Peshawar among female medical students. SAMPLING TECHNIQUE: participants were recruited using convinence sampling technique. SAMPLE SIZE: sample size of 64 students were collected using WHO Calculator with effect size of 0.3,power of 0.8, and a significance level of 0.05, accounting for potential dropouts. STUDY POPULATION: female medical students with age 18 _24 years , enrolled in full time acedemic program and fasting regularly through out the month of Ramadan. EXCLUSION CRITERIA: those with menstruation, anr chronic illness and those taking medications. DATA COLLECTION: data was collected from all the participants at three different time points i.e one week before Ramadan , at 14th or 15th day of Ramadan and one week afterRamadan. Data was collected using a validated online questionaires. For accessing sleep quality Pittsburgh sleep quality index was used . For daytime sleepiness epsworth sleepiness scale was used . And memory was assessed using a memory recall test . DATA ANALYSIS: datawas analyzed using spss. For descriptive analysis mean and standard deviation was performed and then repeated measures ANOVA test was applied.

Results: Sleep quality altered midramadan with poor sleep quality and delayed bedtime but it become normalize after Ramadan. Daytime sleepiness increase during Ramadan but normalize just after Ramadan. Their was a mild decline in memory during Ramadan but improved after Ramadan . Conclusion/Recommendations: So we conclude that sleep quality worsen during Ramadan with increase in daytime sleepiness.Also there is mild dip in memory during Ramadan but all these effects are transient and temporary and improve after Ramadan

RECOMMENDATIONS: 1) encouraging consistent sleep pattern during Ramadan 2) providing short daytime naps to avoid day time sleepiness 3) encouraging physical activity to increase alertness

Keywords: Ramadan fasting Sleep quality Somnolence Memory Medical Students

SP 4:

Abstract Title: Effects of energy drinks on neurophysiology of the bladder

Wajiha Ali

Objective/Hypothesis: To compare the differences in urodynamics of patients with overactive bladder on energy drinks vs no energy drinks

Study Design: Randomised Control Trial

Materials and Methods: This randomized clinical trial was conducted at the Department of Urology at IKD/HMC, from January to December 2025. A total of 80 patients with clinical features of overactive bladder were enrolled and randomly allocated into two equal groups using the lottery method: energy drink consumers (Group A) and non-consumers (Group B). Patients with cystitis, prior urological surgery, or neurogenic bladder were excluded. All participants underwent urodynamic evaluation, and data were recorded on a structured proforma and analyzed using SPSS.

Results: The mean age of the participants was 25 ±6.6 years. In group A, 28 (70%) patients showed significant change in cystometric findings of unstable bladder as compared to Group B with 8 patients with cystometric features of bladder instability (p=0.001). The mean post void residualurine was high 89±10.3 in Group A versus 43±8.6ml (p=0.001). There was no significant difference Uroflowmetry in both groups.

Conclusion/Recommendations: The energy drinks adversely affects the neurophysiology of urinary bladder

Keywords: Urodynamics Overactive bladder Energy drinks

SP 5:

Abstract Title: Prevalence Of Measles In Vaccinated And Unvaccinated Children In QHAMC, Nowshera

Zunaib Jalil

Objective/Hypothesis: Measles is an infectious disease that is a prodigious threat to mortality under 5. This is cross sectional study was conducted to find the prevalence of measles vaccination and its effectiveness

Study Design: Observational Cross-sectional study

Materials and Methods: In this hospital based study a total of 606 samples were taken of children under 5 years of age visiting QHAMC, Nowshera. A proforma was structured which asked about the Bio data, Vaccination status and Measles contraction history. MSWord and SPSS software were used for data management and presentation.

Results: Results showed that Amongst 606 participants, 339(55.94%) were vaccinated while 267(44.06%) were unvaccinated. In these 339 vaccinated children 147(43.36%) children had measles while 192(56.64%) were free of measles. In the 267(44.06%) unvaccinated children 168(62.92%) had measles while 99(33.08%) were free of measles

Conclusion/Recommendations: This study concludes that Measles prove to be a huge burden on health and economical sectors of the state and measures need to be taken seriously, out of which measles vaccine prove to be very effective. Steps are need to be taken to ensure the administration of these vaccines to all the population to reduce further burden. Also more effective vaccines and strategies need to be developed.

Keywords: Measles, Children under 5 years of age, vaccination, mortality.

SP 6:

Abstract Title: Awareness and Attitude of Khyber Pakhtunkhwa university students towards Premarital β-thalassemia screening tests

Maheen Ali

Objective/Hypothesis: To assess the knowledge and attitude of Khyber Pakhtunkhwa university students toward premarital β-thalassemia screening tests.

Study Design: An observational, cross-sectional study was conducted from March to September 2025 among 258 unmarried non-health sciences students, selected through convenience sampling from public and private universities of Khyber Pakhtunkhwa (KP), Pakistan

Materials and Methods: Data were collected using a pre-structured questionnaire distributed both online and in print, assessing demographic information, knowledge and attitude in distinct sections. Statistical analysis was performed using SPSS version 27.

Results: Among the 258 participants, 62.4% were male and 37.6% were female. Regarding knowledge levels, 43% demonstrated poor knowledge, 43% had moderate knowledge, and only 14% exhibited good knowledge of premarital β-thalassemia screening tests. Attitude toward screening were predominantly neutral (53.5%) or negative (46.5%), and no participant expressed a positive attitude. Significant associations were observed between attitude and family history ofthalassemia ($p = 0.034$), age and attitude ($p = 0.022$), and knowledge and attitude ($p = 0.001$). Interestingly, a negative correlation ($r = –0.394$) was found between knowledge and attitude, indicating that participants with higher knowledge were more likely to express negative attitudes toward screening.

Conclusion/Recommendations: This study highlights insufficiency of knowledge regarding βthalassemia within the KP population, reflecting persistent cultural and social barriers to implementation. Targeted educational interventions along with enforcement of mandatory screening legislation are critical to increase the acceptance of PMS in Pakistan.

Keywords: β-thalassemia, Premarital Screening, Knowledge, Attitude

SP 7:

Abstract Title: BARRIERS TO INITIATE INSULIN THERAPY AND ITS ASSOCIATION WITH DURATION OF DIABETES MELITIS AND DEMOGRAPHIC FACTORS IN UNCONTROLLED TYPE 2 DIABETIC PATIENTS: A CROSS SECTIONAL STUDY

Reshael Saeed,

Objective/Hypothesis: To determine different barriers to initiate insulin therapy and association of duration of diabetes mellitus and demographic factors with barriers in initiation of insulin therapy in Uncontrolled type 2 diabetic patients.

Study Design: This cross sectional study was conducted on patients with Type 2 diabetic patients presenting to out patient clinics in tertiary care hospitals of Peshawar. The duration of study was 3 months after approval of synopsis.

Materials and Methods: We conducted a cross sectional study conducted among patients with type 2 diabetic patients presenting to endocrinology outpatient clinics in two Tertiary care hospitals of Peshawar i.e Khyber teaching hospital and Hayatabad medical complex Peshawar. The duration of study was 03 months after approval of synopsis. The sample size was 257.The study population was selected by consecutive non probability sampling technique. The data was collected by predesigned questionnaire. All the included patients were interviewed on pre designed questionnaire. Data was processed in SPSS version 22.

Results: In study we found that patients face diff erent barriers to initiate insulin therapy. In our study, side effects of insulin was the barrier for 97(37.7%) of the patient, difficulty in carrying insulin was barrier for 128(49.8%) patients , dose adjustment of insulin was barrier for 90(35%) patients, fear if insulin needle was barrier for 89 (34.6%) patients, self administration of insulin was barrier for 98(38.1%) patients , affordability of insulin was barrier accounting for 114(44%) patients , frightened about insulin therapy by someone was barrier for116 (45.1%) patients. The association between economic status of patient and the barrier that they are frightened by someone was statistically significant. Chi-square test was also run between duration of diabetes with all barriers in which one association was found nearly significant i.e. the association of duration of diabetes with difficulty in carrying insulin with the p value of 0.064.

Conclusion/Recommendations: The most common barrier in insulin therapy initiation of patients in the study was difficulty in carrying insulin. We found that there is near to significant association between duration of diabetes and difficulty in carrying insulin. There is significant association between economic status of patient and frightened by someone. The lower the economic status the more frightened about insulin use.

Keywords: Uncontrolled type 2 diabetes,Barriers,Insulin therapy

SP 8:

Abstract Title: A Cross-sectional Study on: Early Barriers and the Impact of Role-Model Exposure on Medical Students' Interest in Neurosurgery

Ibtisam Tahir Muhammad,

Objective/Hypothesis: Bridging neurosurgical inequities requires not only technological modernization but also the development and utilization of intellectual capital. This research explores the many sided reasons why numerous healthcare professionals are deterred from pursuing neurosurgery as a career, with notable focus on early barriers and the influence of role model exposure on medical students' interest in the field.

Study Design: A cross-sectional survey study conducted among medical students from various institutions worldwide.

Materials and Methods: This cross-sectional study was conducted among medical students worldwide to assess their knowledge, perceptions, and interest in neurosurgery as a career. A total of 209 participants from various medical institutions were included. Inclusion criteria encompassed all enrolled medical students regardless of year, age, or gender. Data were collected using a structured online questionnaire designed on Google Forms. The questionnaire included sections on demographics, career preferences, perceptions of neurosurgery, and perceived barriers to pursuing the specialty. Responses were primarily collected using Likert-scale and multiple-choice questions. Statistical analysis was performed using descriptive statistics to summarize demographic characteristics and trends in career interest. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and data confidentiality was strictly maintained.

Results: A total of 209 medical students participated in the questionnaire. Most were first-year students (33%), aged 18–24 years (approximately 80%), and 60% were female. Regarding career preference, 24% expressed strong interest in pursuing neurosurgery (8% strongly agreed, 16% agreed), while 16% reported no particular preference. The three most popular specialties were surgery (18%), neurosurgery (10%), and medicine (10%). The main perceived obstacles to choosing neurosurgery were long training (5%), work–life imbalance (3%), financial cost (2%), and limited mentorship (2%). Overall, most students agreed that early exposure, mentorship, and workshops would increase confidence and stimulate interest in pursuing neurosurgery.

Conclusion/Recommendations: The results suggest that early and meaningful exposure to neurosurgical role models significantly enhances students' interest in the speciality. Mentorship, workshops, and clinical engagement as part of early medication education, reduces barriers and fosters genuine enthusiasm for pursuing neurosurgery among medical students.

Keywords: Neurosurgery; Medical Students; Career Choice; Mentors; Cross-Sectional Studies.

SP 9:

Abstract Title: Comparative Outcomes of Arthroscopic Meniscectomy Versus Conservative Management for Medial Meniscus Injuries: A Retrospective Cohort Study

Anfal Khan

Objective/Hypothesis: To compare short-term functional outcomes of arthroscopic partial meniscectomy and conservative management for medial meniscus injuries.

Study Design: Retrospective Cohort Study

Materials and Methods: This retrospective cohort study included 90 patients with MRI-confirmed medial meniscus tears treated at a single tertiary center between February 2024 and February 2025. Patients received either arthroscopic partial meniscectomy (n = 50) or an 8-week structured rehabilitation program (n = 40). The primary outcome was >30% improvement in the Knee Injury and Osteoarthritis Outcome Score at 6 months, with secondary outcomes including Lysholm and Tegner scores, reoperation rates, complications, and predictors of favorable outcomes.

Results: At 6 months, >30% KOOS improvement was observed in 72.0% of surgically treated patients compared with 50.0% in the conservative group ($p = 0.02$). Mean Lysholm (81.4 ± 8.2 vs. 73.6 ± 9.8; $p = 0.01$) and Tegner scores (5.5 ± 1.1 vs. 4.3 ± 1.2; $p = 0.02$) were significantly higher following APM. Favorable outcomes were independently associated with age <50 years, BMI <30 kg/m², and minimal cartilage damage. Reoperation rates were lower after APM (4.0% vs. 12.5%; $p = 0.04$), with few complications in both groups.

Conclusion/Recommendations: While conservative treatment is still appropriate as first-line therapy for degenerative tears, arthroscopic partial meniscectomy produced better short-term outcomes and a quicker recovery in certain patients without advanced degeneration.

Keywords: Medial meniscus tear, arthroscopic partial meniscectomy, conservative management, knee injury, functional outcome.

SP 10:

Abstract Title: Prevalence of Measles Among Vaccinated and Unvaccinated Children: A Cross Sectional Study from Swat, Pakistan

Anfal Khan

Objective/Hypothesis: To compare measles prevalence between vaccinated and unvaccinated children and assess the protective effect of vaccination.

Study Design: cross-sectional study

Materials and Methods: A cross-sectional study was conducted over three months in the pediatric departments of Saidu Group of Teaching Hospitals, Swat. A total of 400 children aged 6 months to 15 years were enrolled. Participants were classified as vaccinated (≥1 dose) or unvaccinated. Data on demographics, vaccination history, and measles status were collected through a structured questionnaire. Statistical analysis was performed using SPSS version 27, with chi-square tests applied to examine associations ($p < 0.05$).

Results: Of the 400 children, 223 (55.8%) were male and 177 (44.3%) female, with a mean age of 3.23 years. Overall, 221 (55.3%) were confirmed measles cases. Vaccination coverage was 55.5% ($n = 222$). Measles prevalence was highest among children aged 5–10 years (56.6%). Females were more frequently affected (58.7%, $p = 0.006$). A significant association was observed between vaccination status and measles occurrence ($p = 0.04$). Among vaccinated children, 43.3% contracted measles, compared to 67.4% of unvaccinated children.

Conclusion/Recommendations: Measles prevalence was substantially higher among unvaccinated children, highlighting the critical role of vaccination in reducing disease burden. Strengthening immunization coverage and addressing vaccine hesitancy are essential for controlling future outbreaks in Pakistan.

Keywords: Prevalence, Measles, Vaccinated, Unvaccinated, Children.

SP 11:

Abstract Title: A PATTERN OF ANTIMICROBIAL SENSITIVITY AND RESISTANCE OF SALMONELLA TYPHI AND SALMONELLA PARATYPHI AMONG CHILDREN WITH ENTERIC FEVER IN A TERTIARY CARE HOSPITAL, SWAT, PAKISTAN .

Anfal Khan,

Objective/Hypothesis: To evaluate the demographic characteristics, antibiotic resistance patterns, and sensitivity profiles of Salmonella infections in children.

Study Design: cross-sectional study

Materials and Methods: A cross-sectional study was conducted on 92 children with culture confirmed Salmonella infections. Data on demographics, organism type, and antibiotic sensitivity patterns were collected and analyzed. Antibiotic susceptibility was determined using standard laboratory protocols, and resistance rates were documented for commonly used antibiotics.

Results: The study included 92 children with a mean age of 4.76 ± 1.24 years, of which 37% were male and 63% female. Among the isolates, 96.74% were identified as Salmonella Typhi and 3.26% as Salmonella Paratyphi. Antibiotic resistance was highest for nalidixic acid (95.7%), ampicillin (93.5%), and ceftriaxone (81.5%). Moderate sensitivity was observed for fluoroquinolones, withlevofloxacin showing a sensitivity of 44.6%. Meropenem (97.8%) and azithromycin (98.9%) exhibited the highest sensitivity rates, indicating their effectiveness as treatment options.

Conclusion/Recommendations: The study highlights the alarming resistance rates to commonly used antibiotics, emphasizing the need for stringent antibiotic stewardship programs. Meropenem and azithromycin emerged as the most effective antimicrobials for treating MDR Salmonella infections. The findings underscore the importance of vaccination campaigns and the prudent use of antibiotics to combat resistance.

Keywords: Enteric Fever, Antibiotic resistance, multidrug-resistant (MDR), Salmonella.

SP 12:

Abstract Title: Assessment of awareness among the Beneficiaries of Sehat Sahulat Program .

Munazza Sikandar ,

Objective/Hypothesis: The main objective of this study is to determine the awareness level among the beneficiaries of Sehat Sahulat Program in Peshawar.

Study Design: This study employed a descriptive cross-sectional design.

Graphic attachments (i.e. tables, illustrations and pictures): https://www.nwsm.edu.pk/wp content/uploads/elementor/forms/69960e6a06789.docx

Materials and Methods: Study Population: Area: Residents of Peshawar who are also the Beneficiaries of Sehat Sahulat Program. Age: 18 years & above. Study Timeframe: June 2024 to April 2025 Sample Size: 384 participants made up the sample size which was determined using Open epi. Sampling Technique: Convenient Non- Probability Sampling Technique. Data Collection Tool: The questionnaire was developed after a detailed literature review, validated by experts, and finalized following a pilot study on 40 participants. Data Collection: Data was collected through a structured questionnaire on a 3-point Likert scale to assess the level of awareness of theespondents. Data Analysis: Software: SPSS version 20. Test applied: Chi- square Test. Regression Analysis: Binary Logistic Regression Analysis.

Results: A survey of 384 adults in Peshawar (72.4% males, 27.6% females) assessed awareness of the Sehat Sahulat program, revealing that only 24.5% had high awareness while 74.7% showed low awareness as shown in the figure below. Our results also showed that awareness was highest for accessibility (50.8%) and eligibility (48.4%), but low for financial aspects (22.4%), service coverage (23.4%), and updates & promotions of SSP. Education showed a significant impact on SSP awareness ($p=0.005$), with higher-educated participants having notable high awareness (21.4%), while those without formal education (29.9%) had overall lower awareness. Regression Analysis showed that middle school education level participants were more aware of SSP ([aOR] 3.593; $p < 0.001$).

Conclusion/Recommendations: To enhance the effectiveness and utilization of the Sehat Sahulat Program, targeted efforts are needed to bridge the identified awareness gaps among beneficiaries. Clear and culturally appropriate communication strategies should be implemented, including community-based workshops, informational brochures, and mass media campaigns that simplify program features, eligibility criteria, and financial coverage. Introducing user-friendly digital tools such as SMS-based eligibility checkers can improve accessibility and reduce confusion. Given the significant proportion of participants with limited or negative perceptions around financial aspects, transparent disclosure of costs and coverage benefits, supported by real-life success stories, is essential to build trust. Future research should expand to multiple provinces and employ

longitudinal designs to assess how awareness evolves over time and impacts service utilization. Finally, integrating objective assessments of knowledge alongside self-reports can improve the accuracy of awareness measurement and inform more effective outreach interventions.

Keywords: Sehat Sahulat Program, Awareness

SP 13:

Abstract Title: Refractive Errors and Asthenopia Among Madrasa Students in Upper Dir city, Pakistan: A Cross-Sectional Study.

Ziaul Islam

Objective/Hypothesis: To determine the prevalence of refractive errors and asthenopia among madrasa students in Upper Dir City. To assess the frequency of different types of refractive errors (myopia, hypermetropia, astigmatism) among madrasa students. To evaluate the prevalence and clinical features of asthenopia in these students. To assess the association between refractive errors and symptoms of visual fatigue. To refer or provide corrective spectacles to students found to have uncorrected refractive errors.

Study Design: cross-sectional.

Materials and Methods: A cross-sectional study was conducted among 335 students aged 7–30 years from madrasas affiliated with Wifaq-ul-Madaris in Upper Dir city. convenience sampling technique was used to recruit students. Data were gathered through a structured questionnaire, which was piloted to ensure clarity and reliability, and through ocular assessments, including the Snellen chart and retinoscopy. Data were analyzed using SPSS version 26. Descriptive statistics, Chi-square tests, independent T-tests, and binary logistic regression were used to identify potential factors.

Results: The participants had a mean age of 18.2 ± 3.8 years. The overall prevalence of refractive errors was 37.3%, with myopia being the most frequent type (25.4%), followed by astigmatism (8.4%) and hypermetropia (3.6%). Asthenopia was reported by 80.9% of the students. A significant positive association was observed between refractive errors and asthenopia ($\chi^2 = 18.285$, $p < 0.001$). In the multivariate analysis, a close reading distance (AOR = 2.31, 95% CI: 1.13–4.70, p = 0.02) and a higher-class level (AOR = 1.94, 95% CI: 1.06–3.55, p = 0.03) emerged as independent factors associated with asthenopia. Similarly, close reading distance was identified as an independent factor related to refractive errors (AOR = 2.27, 95% CI: 1.18–4.35, p = 0.014).

Conclusion/Recommendations: Refractive errors and asthenopia are important public health concerns among madrasa students in Upper Dir city. The main modifiable risk factor identified was close reading distance, and students in advanced, memorization-intensive programs (Hifz and Ilam) were at the highest risk. Based on these findings, we recommend an integrated approach: 1.Annual Vision Screening: Implement mandatory refractive error screening for all madrasa students, with priority given to students in Hifz and Ilam programs. 2.Promote Visual Ergonomics: Conduct educational programs for students and teachers on maintaining a proper reading distance (approximately a forearm length). 3.Provide Affordable Correction: Ensure timely and affordable access to corrective spectacles for students with uncorrected refractive errors to reduce eye strain.

4.Policy Integration: Advocate for the inclusion of eye health in the broader madrasa education and health policy framework.

Keywords: Refractive Errors, Asthenopia, Madrasa Students, Visual Fatigue, Pakistan, Public.

SP 14:

Abstract Title: A Case of β-Thalassemia with Frameshift Mutation and Type 3 von Willebrand Disease in a Pediatric Patient.

Ammad Khan,

Objective/Hypothesis: To present a rare pediatric case of coexistent β-thalassemia major with a frameshift mutation and Type 3 von Willebrand Disease, highlighting the clinical presentation, genetic findings, management challenges, and implications for future multidisciplinary care.

Study Design: Case Report.

Materials and Methods: A 3-year-old female presented with spontaneous epistaxis at 19 months of age. Hematologic evaluation included complete blood count, ferritin, coagulation profile, and genetic sequencing. Diagnostic workup revealed microcytic anemia (Hb 6.9–8.6 g/dL), MCV of 73 fL, and RDW of 70.5%. Ferritin levels reached 1778 ng/mL. Coagulation studies showed a VWF antigen level of 1.8%. Molecular analysis of the HBB gene identified a frameshift mutation across exons 8–9. Treatment history and ongoing therapies were documented.

Results: The patient was diagnosed with β-thalassemia major and Type 3 VWD. She has received five red blood cell transfusions, 24 units of fresh frozen plasma, and six vitamin B12 injections.Current medications include Deferiprone (iron chelator), hydroxyurea, folic acid, vitamin K, multivitamins, Vitamin E 200 mg, Calcium + Vitamin D3 supplement, and a combination of Furosemide and Spironolactone. The combination of a bleeding disorder and transfusion dependence poses complex treatment dilemmas, particularly in relation to iron overload, the risk of alloimmunization, and the potential need for splenectomy.

Conclusion/Recommendations: This case underscores the importance of comprehensive genetic and coagulation testing in pediatric patients with overlapping hematologic symptoms. Early diagnosis and tailored multidisciplinary management can significantly reduce the risk of hemorrhagic and thrombotic complications and improve long-term outcomes in such complex dual pathologies.

Keywords: β-thalassemia major, Type 3 von Willebrand Disease, pediatric hematology, frameshift mutation, iron overload.

SP 15:

Abstract Title: Assessment of anxiety and depression among HIV and AIDS patients visiting for Testing, treatment and counselling center in Hayatabad Medical Complex Peshawar.

Syed Omer Asad ,

Objective/Hypothesis: To assess the prevalence of Anxiety and Depression as comorbidity among HIV/AIDs patients

Study Design: Study Design and Setting This investigation employed a cross-sectional, quantitative design to assess the prevalence of anxiety and depression and their associated factors among people living with HIV/AIDS (PLWHA). The study was conducted at the designated HIV/AIDS Testing, Treatment and Counselling Centre located within the Hayatabad Medical Complex (HMC), a major public-sector tertiary care facility serving the Peshawar region of Khyber Pakhtunkhwa, Pakistan. Data acquisition took place over a period spanning (July 2025) through (October 2025).

Materials and Methods: A cross-sectional study was conducted at the HIV/AIDS Testing, Treatment and Counselling Centre, Hayatabad Medical Complex (HMC), Peshawar. A total of 176 participants were recruited via convenience sampling. Data were collected using a structured questionnaire for sociodemographic and clinical characteristics, and the Hospital Anxiety andDepression Scale (HADS) to assess the severity of psychological symptoms. Statistical analyses included descriptive statistics, one-way ANOVA, Chi-square tests, and Pearson correlation.

Results: Results: The study included 176 participants with a mean age of 38.86 ± 13.435 years (range 5–76) and a mean disease duration of 4.99 ± 4.837 years (range 0–25). The total prevalence of anxiety (HADS score > 8) was 36.4% (N=64), and the prevalence of depression (HADS score > 8) was 49.4% (N=87). The severity breakdown showed that severe anxiety (HADS > 15) was observed in 12.5% (N=22) of patients, while severe depression (HADS > 15) was found in 11.9% (N=21) of patients. Anxiety and depression scores showed a strong, positive correlation ($r = 0.675$, $p < 0.001$). Gender was found to be a significant predictor of anxiety ($x2 = 16.242$, $p = 0.013$), but it was not significant for depression ($x2 = 7.168$, $p = 0.306$). Marital Status and Occupation were not found to be significant predictors for either anxiety or depression.

Conclusion/Recommendations: The findings confirm a high psychological burden among PLWHA in the region, consistent with international data, and identify gender as a significant demographic factor associated with anxiety. This study highlights the urgent need for integrated mental health screening in standard HIV care.

Keywords: HIV/AIDS, Anxiety, Depression, HADS, Peshawar, Mental Health Integration, Pakistan.

SP 16:

Abstract Title: Audit and Re-Audit of Discharge Note Documentation: Assessing the Impact of Quality Improvement Measures in a Tertiary Hospital .

Tayyab Nawaz Khan,

Objective/Hypothesis: The clinical audit aimed to confirm the proper completion of discharge summary of patients admitted to the Medicine, Gynaecology, Paediatrics, and Surgery departments of Naseer Teaching Hospital, Peshawar

Study Design: The clinical audit was conducted at the Naseer Teaching Hospital Peshawar, a 250-bed tertiary teaching Hospital. The audit focus was on discharge slip at multiple wards. Data was collected from the patient discharge slip. The first cycle ran in July 2025, a total of 100 sample collected. The result of first cycle was presented in multi departmental meeting of NTH in which all the deficiency were discussed. The second cycle ran in dec 2025 another set of 100 data set collected. The data of both cycles were entered in google sheet and analyzed as frequencies and percentage

Materials and Methods: AUDIT STANDARDS: 1.NICE Guidelines (UK)-NG27, Transition between inpatient hospital settings and community or care home settings. 2. WHO Patient Safety & Continuity of Care Guidelines 3. Joint Commission International (JCI) Hospital Standards

Results: The overall adherence in the first audit cycle was 60.9% .The presenting complaint during the first cycle was 25% which improve to 100% in the second cycle. The overall adherence of reaudit was 80.1% which significantly improve the quality of discharge slip

Conclusion/Recommendations: we achieved the main goal during our reaudit all discharge slip change from handwritten to computerized. Hundred percent achieve the adherence of presenting complaint, investigation documentation.However there is still some deficiency in patient contact information and pending investigation.

Keywords: Discharge slip, Documentation, Medical record, Clinical audit.

SP 17:

Abstract Title: A Multidepartment Clinical Audit on Allergy Documentation Practices in Medicine, Gynecology, Pediatrics, and Surgery.

Tayyab Nawaz Khan,

Objective/Hypothesis: The clinical audit aimed to confirm the proper documentation of allergies in the medical history section of patients admitted to the Medicine, Gynecology, Pediatrics, and Surgery departments of Naseer Teaching Hospital, Peshawar

Study Design: The clinical audit was conducted at the Naseer Teaching Hospital Peshawar, a 250-bed tertiary teaching Hospital. The audit focus was on allergy documentation at four clinical wards i.e. Pediatrics, Medicine, Surgery, and Gynecology. Data was collected from the patient files. The first cycle ran in July 2025, a total of 80 sample collected 20 from each department The result of first cycle was presented in multi departmental meeting of NTH in which all the deficiency were discussed. The second cycle ran in dec 2025 another set of 80 data set collected. The data of both cycles were entered in google sheet and analyzed as frequencies and percentage

Graphic attachments (i.e. tables, illustrations and pictures):

Materials and Methods: NICE Guideline – Drug Allergy: Diagnosis and Management of Drug Allergy in Adults, Children and Young People (CG183) Australian Commission on Safety and Qualityin Health Care – Medication Safety Standards SNOMED CT – Implementation Guide for Allergy, Hypersensitivity, and Intolerance

Results: The overall adherence in the first audit cycle was 11.1 %. In which the allergy mentioned in medical history is 4. The allergy section is only mentioned and highlighted in pediatric and medicine file 40 (50%). The adherence in second cycle increased to 32% which marked high improvement up to +20.9%.

Conclusion/Recommendations: In the second cycle a significant improvement is seen in overall adherence. However improvement is still needed as the adherence is below from the optimal level

Keywords: Allergy, Documentation, Medical record, Clinical audit.

SP 18:

Abstract Title: Am I Really Fat ?" Exploring Self-Perceived Body Image and Its Associations with the Nutritional Status of Medical Students in District Peshawar .

Syed Shan Ali,

Objective/Hypothesis: The objectives of the study were: A. To assess self-perceived body image of medical students. B. To analyze the nutritional status of medical students on indicators of BMI and dietary patterns. C. To investigate correlation between self-perceived body image and nutritional status of medical students.

Study Design: Cross-sectional study

Materials and Methods: After obtaining ethical approval from ARB committee of PIMC, a cross sectional study was carried out in a sample population of 400 medical students; sample calculated through Cochran formula with a confidence ratio of 95% and margin of error 5%. 200 students each of either gender were selected by non-probability convenient sampling technique, 100 each from four medical colleges i.e. PIMC, RMC, NWSM and KMC, in the age range of 18-26 years, after an informed consent. Data was collected by 3 groups of 4th year Batch E students using a predesigned pretested self-administered questionnaire. Data was entered and analyzed using IBM SPSS Statistics 27. The study lasted from January 2025 to June 2025.

Results: Majority of the students (60.3%) were in the age range of 21-23 years. 66% had normal BMI.201 students (50.2%) took breakfast daily as opposed to others who took it sometimes or rarely.128 students (32%) never took exercise. 146 students (36.5%) were dissatisfied with their body image while rest of the students, 254 in number (63.5%) were not dissatisfied. Different factors contributing to dissatisfaction with body image among 146 students of all four medical colleges included weight on the top, 49 (33.6%) followed by height 19 (13%) and then physical appearance including, skin colour 17 (11.6%), shape & size of the nose 15 (10.3%), waist size 17 (11.6%), acne 14 (9.6%), societal pressure 6 (4.1%) and others 9 (6.2%). Students in the age range 21-23 years were dissatisfied the most, 86 (59%). Among the students dissatisfied with their body image, girls, 90 (45%), were more as compared to boys, 56 (28%). The relationship between students' BMI category and their self-perceived body image was statistically significant, χ^2 (3, N = 400) = 21.83, $p < .001$), indicating that self-perception varied across BMI categories. However, a Cohen's Kappa analysis revealed that the level of agreement between the two variables was negligible, $\kappa = .011$, SE = .0125, 95% CI [−.0132, .0358], with an observed agreement of 6.0% (24 out of 400) and an agreement expected by chance of 4.93% (≈ 19.7 cases).

Conclusion/Recommendations: The main reason for dissatisfaction among students was body weight followed by height. The agreement between perceived body weight and nutritional status was poor.

Keywords: Keywords: BMI, bodyweight, medical student, nutrition.

SP 19:

Abstract Title: Determinants of Stroke: A Study of Risk Factors among Patients at a Teaching Hospital in Peshawar

Musa khan

Objective/Hypothesis: To evaluate the risk factors among hospitalized stroke patients in Peshawar and to compare them between males and females.

Study Design: A cross-sectional study was conducted among 113 patients (57 males, 56 females; mean age 64.6 ± 11.4 years).

Materials and Methods: Data on demographics, risk factors including hypertension, diabetes, cardiovascular disease (CVD), lifestyle behaviors, emotional factors, social isolation, and rehabilitation satisfaction were collected. Gender differences were analyzed using chi-square tests.

Results: Hypertension was prevalent in 62% of participant(36 males, 33 females)(p=0.385). Diabetes affected 48% of patients and was significantly more prevalent in females (29.2%) (p=0.004). Previous stroke and cardiac diseases were significantly more prevalent infemales(p=0.01). Lifestyle factors varied by gender: tobacco use was higher in men(52.6%), while ghee consumption was more common among females(75%). Social isolation was significantly more reported by females (33.6%) than males (16.8%)(p=0.004). Although a higher percentage of females reported emotional distress (F=32.7% vs. M=19.4%), this difference was not statistically significant (p=0.56). Encouragingly, most patients (75.2%) expressed satisfaction with rehabilitation services.

Conclusion/Recommendations: The study reveals a heavy burden of hypertension, diabetes, and cardiovascular diseases among stroke patients, with females facing greater challenges related to health, emotional well-being, and social support. The findings highlight the essential need for targeted, gender-sensitive prevention strategies, lifestyle interventions, and improved rehabilitation access to mitigate long-term stroke risk.

Keywords: Hypertension; Diabetes; Stroke; Cardiovascular disease; Gender disparities; Social isolation; Rehabilitation

SP 20:

Abstract Title: Nicotine Pouches on Campus: Investigating knowledge, frequency and predicting factors leading to its usage among the medical and non-medical students of Peshawar.

Kamran Khan ,

Objective/Hypothesis: To evaluate the prevalence, knowledge, and predictors of nicotine pouch use among university students pursuing medical and non-medical programs in Peshawar

Study Design: Cross sectional analysis

Materials and Methods: A comparative cross-sectional study was conducted for a period of six months. It involved 362 students (183 medical and 179 non-medical) out of eight universities in Peshawar. A structured questionnaire assessed nicotine pouches' influencing factors, usage patterns, knowledge, and demographics of participants. Data analysis was performed via SPSS v27.

Results: NP usage prevalence was 27.6%, with non-medical students showing significantly higher usage(33.0%) compared to medical students (22.4%), suggesting that lack of formal health education may contribute to higher susceptibility. NPs were seen as safer than cigarettes by merely 51.9% even though 83.7% acknowledged them to be addictive also 63.0% were unaware of restrictions. Logistic regression revealed that knowing pouch placement ($p < 0.001$) and being aware of nicotine content ($p < 0.05$) greatly predicted beliefs regarding safety and addictiveness

Conclusion/Recommendations: Despite moderate awareness of the addictive nature of nicotine pouches, misconceptions regarding their safety and legality persist. Peer pressure, stress, and marketing, significantly influence NP usage among university students. Immediate interventions focusing on education, policy enforcement, and behavioral support are necessary.

Keywords: Nicotine pouches, university students, peer influence, stress, knowledge, Pakistan, oral nicotine, tobacco-free products, logistic regression, public health.

SP 21:

Abstract Title: Cost of a Skipped Visual Field Test: Misdiagnosed Pituitary Adenoma Leading to Irreversible Vision Loss — A Case Report from Rural Pakistan.

Muhammad Shahbaz Khan,

Objective/Hypothesis: Objective: To emphasize the importance of visual field testing in suspected glaucoma to prevent misdiagnosis of compressive optic neuropathies such as pituitary adenoma. Hypothesis: Omission of perimetry in suspected glaucoma increases the risk of delayed diagnosis and irreversible visual loss from intracranial tumors.

Study Design: CASE REPORT

Materials and Methods: A 55-year-old woman from rural Pakistan presented with painless, progressive vision loss. Initial ophthalmoscopic examination revealed optic disc cupping, leading to a presumptive diagnosis of glaucoma. Anti-glaucoma therapy was started without visual field assessment. Over the following weeks, her vision deteriorated despite adherence to treatment. Referral to a tertiary eye care facility resulted in perimetry, which demonstrated severe left-eye constriction (10% remaining vision) and partial right-eye loss. MRI of the brain revealed a pituitary macroadenoma compressing the optic chiasm. The delayed diagnosis caused irreversible blindness in the left eye and significant impairment in the right eye.

Results: This case highlights the essential role of visual field testing in distinguishing glaucomatous from non-glaucomatous optic neuropathies. Although pituitary adenomas are less common than glaucoma, they must be considered in atypical cases. In resource-limited environments, economic and logistical constraints frequently limit access to perimetry, increasing the risk of missed intracranial pathologies

Conclusion/Recommendations: Omitting visual field testing in suspected glaucoma cases can result in irreversible vision loss and delayed detection of life-threatening brain tumors. Expanding access to perimetry and strengthening diagnostic vigilance among primary eye care providers is critical, especially in rural and underserved regions.

Keywords: Pituitary adenoma, Glaucoma, Misdiagnosis, Visual field testing, Low-resource.

SP 22:

Abstract Title: Assessing the Learning Climate for Medical Interns in Peshawar: A Cross-sectional Analysis

Hadiqa murad,

Objective/Hypothesis: To evaluate the educational environment for interns during their internship rotation and identify strengths and weaknesses across three domains: role of autonomy, teaching and social support, using the Postgraduate Hospital Educational Environment Measure (PHEEM) questionnaire in Peshawar.

Study Design: A cross-sectional study was conducted at Northwest General Hospital and Research Centre, Peshawar.

Materials and Methods: A cross-sectional study was conducted at Northwest General Hospital and Research Center, Peshawar. Data were collected using a convenience sampling technique with the PHEEM (Postgraduate Hospital Educational Environment Measure) questionnaire. The Data were entered and analyzed by SPSS version 27.

Results: A total of 204 responses from interns across different departments completed the PHEEM questionnaire. The overall Cronbach's alpha for the 40-item PHEEM inventory across all departments was 0.947, indicating excellent internal consistency and reliability of the tool. The combined mean of the PHEEM score for all the departments, including all three parameters, was 132.39 out of a maximum of 160, reflecting that an excellent education environment was perceived by the interns. Scores for role autonomy, teaching, and social support were 47.70/56, 54.77/60, and 33.56/44, respectively.

Conclusion/Recommendations: The PHEEM-based study at Northwest General Hospital, Peshawar, revealed an excellent educational environment for medical interns, with strong scores in role autonomy (47.70/56), teaching (54.77/60), and social support (33.56/44). Surgery and Allied Medicine excelled, while Obstetrics and Gynaecology scored lowest, likely due to high workloads. Minor improvements in workload management and support facilities could further enhance the internship experience.

Keywords: Medical Interns, Medical Education, Training environment, Internship experience, Clinical Learning, Healthcare education, Mentorship.

SP 23:

Abstract Title: Efficacy and Safety of Intravenous Thrombolysis Plus Endovascular Thrombectomy Compared to Endovascular Thrombectomy Alone in M2 Segment Occlusion of the Middle Cerebral Artery: A Systematic Review and Meta-Analysis .

Bareera Asad,

Objective/Hypothesis: The objective of this systematic review and meta-analysis was to evaluate the efficacy and safety of bridging therapy with intravenous thrombolysis plus endovascular thrombectomy compared with direct endovascular thrombectomy alone in patients with acute ischemic stroke caused by M2 segment middle cerebral artery occlusion. We hypothesized that bridging therapy would be associated with improved functional independence at 90 days without a significant increase in mortality or symptomatic intracranial hemorrhage compared with EVT alone.

Study Design: This study was a systematic review and meta-analysis conducted in accordance with PRISMA guidelines, including randomized and observational studies that compared bridging therapy (intravenous thrombolysis plus endovascular thrombectomy) with direct endovascular thrombectomy in patients with acute ischemic stroke due to M2 segment middle cerebral artery occlusion.

Materials and Methods: This systematic review and meta-analysis was conducted according to PRISMA guidelines and registered in PROSPERO. PubMed, Scopus, and Embase were searched through September 2025 for studies comparing bridging therapy (IVT + EVT) with direct EVT in patients with M2 segment MCA occlusion. Eligible randomized and observational studies reporting functional, angiographic, or safety outcomes were included. Data extraction and risk-of-bias assessment were performed independently by two reviewers using ROBINS-I and RoB 2 tools. Pooled odds ratios with 95% confidence intervals were calculated using random-effects models, and heterogeneity was assessed with the I^2 statistic.

Results: Five studies including 1,199 patients were analyzed, of whom 746 received bridging therapy and 453 underwent direct EVT. Bridging therapy was associated with significantly higher odds of functional independence at 90 days compared with EVT alone, while rates of successful reperfusion were similar between groups. No significant differences were observed in 90-day mortality or symptomatic intracranial hemorrhage, and inter-study heterogeneity was low across all outcomes.

Conclusion/Recommendations: Bridging therapy with intravenous thrombolysis plus endovascular thrombectomy was associated with improved functional outcomes without increasing mortality or hemorrhagic risk compared with direct endovascular thrombectomy in patients with M2 segment middle cerebral artery occlusion.

Keywords: Acute ischemic stroke; M2 occlusion; middle cerebral artery; intravenous thrombolysis; endovascular thrombectomy; bridging therapy.

SP 24:

Abstract Title: Cross-Sectional Spectrum Analysis of Hemoglobinopathies Among Patients in Khyber Pakhtunkhwa: Insights from Major Laboratories in Peshawar.

Huma Gul,

Objective/Hypothesis: This study aimed to determine the prevalence of hemoglobinopathies among patients visiting major laboratories in Peshawar and to identify the types and distribution of hemoglobinopathies in the study population. Furthermore, this study aimed to assess the association between hemoglobinopathies and demographic variables such as age, gender, and ethnicity.

Study Design: cross sectional study

Graphic attachments (i.e. tables, illustrations and pictures):

Materials and Methods: A cross-sectional study was conducted with a sample size of 385, using data collected from major laboratories in Peshawar. Information was obtained through a standardized research proforma from laboratory records of patients who had undergone hemoglobinopathy screening tests, such as hemoglobin electrophoresis and high-performance liquid chromatography (HPLC).

Results: The results of the study revealed that thalassemia minor was the most frequently diagnosed hemoglobinopathy, comprising 89.3% of all confirmed cases, followed by Thalassemia major, 8.6%, and sickle cell disease, 2.1%. More cases were observed among male patients (57.3%) as compared to females (42.7%). Statistical analysis through the Chi-square test demonstrated no significant association between the type of hemoglobinopathy and the gender or geographical location of the patient. The diagnostic methodology employed predominantly consisted of Hb electrophoresis being the preferred test, used in 77.9% of cases, while high-performance liquid chromatography (HPLC) was used in 22.1%. These results contribute to the existing body of knowledge by confirming that thalassemia minor remains the most commonly diagnosed hemoglobinopathy in both males and females in this region.

Conclusion/Recommendations: This study was conducted to find the prevalence of hemoglobinopathies, primarily focusing on the type and distribution of hemoglobinopathies and their association with age, gender, and geographical location of the patient. This study concluded that thalassemia minor was prevalent among all the hemoglobinopathies irrespective of age, gender, and geographical location. Both males and females can be victims of it. Among screening tests undergone the preferred test was the Hb electrophoresis rather than HPLC

Keywords: Hemoglobinopathies, consanguinity, thalassemias, sickle cell.

SP 25:

Abstract Title: Knowledge, Attitude, and Practices Regarding Hepatitis B Infection Among Urban and Rural School Teachers of Peshawar.

Aleena salahuddin ,

Objective/Hypothesis: To assess the knowledge, attitudes, and practices regarding hepatitis B infection among school teachers in Peshawar and to compare these parameters between urban and rural populations.

Study Design: Cross sectional study

Materials and Methods: A cross-sectional survey was conducted among 384 full-time teachers from public and private schools in Peshawar using a self-structured questionnaire. Participants were selected by the stratified random sampling technique, and the sample size was calculated using OpenEpi software. Data was collected for KAP regarding HBV and was analyzed using IBM SPSS version 27. A p-value of less than 0.05 was considered to be statistically significant.

Results: The study found that overall, 45.1% of teachers have good knowledge about Hepatitis B, 46.9% had a positive attitude, but only 1.8% were practicing effective preventive measures. Just 27.1% revealed to have been vaccinated. 55.4% of the urban teachers possessed good knowledge compared to 34.7% of rural teachers ($p<0.001$). Interestingly, rural teachers expressed a more positive attitude (49.2% vs 44.6%, $p=0.030$). Preventive practices were alarmingly poor in both groups (3.1% urban, 0.5% rural; $p=0.040$).

Conclusion/Recommendations: Despite moderate knowledge and attitudes, preventive measures and vaccination rates among Peshawar school teachers are alarmingly low, especially in rural areas. The findings of this study underscore the urgent need for focused health education activities and on-site vaccinations for teachers, who can then increase HBV awareness in their respective communities.

Keywords: Hepatitis B, Knowledge, Attitude, Practice, Vaccination, School teachers, Public.

SP 26:

Abstract Title: Burden of Cervical Cancer Among Women in Pakistan (1990-2021): A GBD based study.

Fazal Syed,

Objective/Hypothesis: This study aimed to assess the burden and temporal trends of cervical cancer among women in Pakistan from 1990 to 2021 using data from the Global Burden of Disease (GBD) 2021 study.

Study Design: Global Burden of Disease database

Materials and Methods: A population-based observational analysis was conducted using GBD 2021 estimates. Data were extracted on prevalence, incidence, mortality, and disability-adjusted life years (DALYs) related to cervical cancer among Pakistani women. Estimates were generated using the DisMod-MR 2.1 modeling framework. Temporal trends were evaluated using joinpoint regression analysis, and Average Annual Percent Change (AAPC) was calculated. Provincial-level prevalence rates for 2021 were also analyzed to assess geographic variation.

Results: Between 1990 and 2021, the prevalence of cervical cancer increased from 8,034 to 28,451 cases (+254%), while incidence rose from 2,317 to 6,734 cases (+191%). Mortality increased from 1,432 to 3,386 deaths (+136%). Despite these increases, the age-standardized DALY rate showed amodest decline from 166.3 to 157.5 per 100,000 population (−5.3%). In 2021, the highest prevalence rates were observed in Azad Jammu and Kashmir, Balochistan, and Khyber Pakhtunkhwa, while Sindh and Islamabad had comparatively lower rates.

Conclusion/Recommendations: The burden of cervical cancer in Pakistan has increased substantially over the past three decades. Rising incidence and mortality highlight persistent gaps in prevention and early detection. Urgent implementation of nationwide HPV vaccination, expanded screening programs, and strengthened cancer control policies is essential to reduce the future burden of cervical cancer in Pakistan.

Keywords: HPV, Cervical Cancer, Global Burden of Disease.

SP 27:

Abstract Title: Knowledge, Practices, and Barriers of Informed Consent Among Postgraduate Medical and Surgical Residents in Peshawar .

Fouzia Wazir,

Objective/Hypothesis: To determine the knowledge, practices, and barriers of informed consent among medical and surgical postgraduate residents of the tertiary care hospitals in Peshawar, Khyber Pakhtunkhwa (KP), Pakistan

Study Design: Cross sectional

Materials and Methods: A cross-sectional study was conducted from June 2025 to August 2025 among 294 medical and surgical postgraduate residents in public and private hospitals in Peshawar through a self-structured questionnaire, using convenience sampling, and analyzed by SPSS version 27.

Results: 65% of postgraduate residents were aware of informed consent, especially legal requirements and ethical principal 92.9% and 91.8% respectively, while lower for assessing decision capacity (36.7%) and voluntariness (21.4%). Practice levels were lower than the awareness level, despite the frequent use of standardized forms and verification of understanding. Language barriers (74.1%) and time constraints (58.5%) were key obstacles in obtaining informed consent. Awareness and practice significantly correlated with gender, hospital, and department ($p < .001$), but not age. Barriers showed no significant associations with department or training year.

Conclusion/Recommendations: Regardless of the high awareness of informed consent among residents, it was moderately practiced in hospitals, with a weakness in assessing decision-making and voluntariness. Language barriers and time constraints embarrass the practice of informed consent. Structured training and barrier mitigation could bridge this awareness practice gap and strengthens practice of informed consent.

Keywords: Informed Consent, Postgraduate residents, Awareness, Safety Practice, Barriers, Ethics, Training, Language barriers, Decision capacity, Peshawar.

SP 28:

Abstract Title: A Comparative Study of Needle Stick Injury Incidence, Safety Practices, and Impact Between Doctors and Nurses at Tertiary Care Hospitals in Peshawar.

Alishba Tahir,

Objective/Hypothesis: To compare the incidence, knowledge, attitude, practice, and impact of needle stick injuries among doctors and nurses in tertiary care hospitals in Peshawar, Pakistan.

Study Design: Comparative Cross Sectional Study

Graphic attachments (i.e. tables, illustrations and pictures):

Materials and Methods: A cross-sectional study was conducted from March to August 2025 in public and private tertiary care hospitals in Peshawar, involving 400 healthcare workers through a stratified convenience sampling technique. A pre-tested, self-structured questionnaire assessed the incidence, knowledge, attitudes, practices, and impacts of needle stick injuries among doctors and nurses. Data were collected after obtaining IRB approval and informed consent. SPSS version 27 was used for analysis, with chi-square tests comparing groups($p<0.005$).

Results: Out of 400 healthcare workers (200 doctors, 200 nurses) in Peshawar tertiary hospitals, 73.5% of the participants reported NSIs (67.5% of doctors, 79.5% of nurses), with a higher rate reported by nurses ($p < 0.005$). The level of knowledge differed substantially ($p=0.018$), and 37.5% had good knowledge. Attitude showed moderate concern (77%), without a significant difference across professions ($p=0.434$). Registered nurses and interns were perceived as most at risk for needlestick injuries (NSIs) ($P < 0.001$), particularly in private hospitals ($P < 0.001$). Safe practice was reported by 52% of respondents, with the nurses following more safety protocol ($p=0.003$). NSIs resulted in physical pain (57.8%), psychological distress (45.3%), and impacted work behaviour (78%). Non-reporting of NSIs (42.8%) was usually because of the injury being minor (37.8%) or lack of awareness about the procedure (16.8%). Public hospitals indicated greater psychological distress ($p=0.001$).

Conclusion/Recommendations: Needle stick injuries are prevalent, particularly among healthcare workers, driven by procedural exposure and unsafe practices. Although knowledge and attitudes are similar in doctors and nurses, nurses exhibit safer practices due to better training. Interventions to reduce the incidence should focus on mandatory training, no-recapping policies, improved reporting, and safety devices to reduce NSI incidence and impacts, especially in public hospitals.

Keywords: Needle Stick Injury, Occupational hazard, Healthcare worker, Incidences, Knowledge, Attitude, Safety Practice, Impact, Post-exposure prophylaxis, Psychological stress.

SP 29:

Abstract Title: Prevalence and Characteristics of Incidental Pituitary Adenomas in Pakistan: A Multicenter Cross-Sectional Study.

Ayesha Ahmad,

Objective/Hypothesis: This study aimed to determine the prevalence and demographic, clinical, and radiological associations of incidental pituitary adenomas (iPAs) in Pakistan using multicenter MRI data. The Hypothesis of the study is that The prevalence of incidental pituitary adenomas (iPAs) in Pakistan is comparable to global rates and is significantly associated with specific demographic factors (e.g., age, gender, region) and clinical presentations (e.g., headache).

Study Design: Multicenter cross-sectional study

Materials and Methods: A retrospective cross-sectional analysis of 421 cranial MRIs (January 2023–December 2024) from four Pakistani centers was conducted. Inclusion criteria comprised MRIs performed for non-pituitary indications. Data on demographics, MRI protocols (1.0T/1.5T), and clinical symptoms were analyzed. Statistical tests included Wilcoxon rank-sum, Pearson's chi square, and Fisher's exact tests.

Results: The prevalence of iPAs was 5.46% (95% CI: 3.57–8.20%), with 12 microadenomas (2.85%) and 11 macroadenomas (2.61%). iPAs showed no significant association with age ($p=0.716$) or gender ($p=0.841$) but were more frequently detected with 1.5T MRI (4.75% vs. 0.71% for 1.0T, $p=0.031$). Headache was the most common symptom (51.07%) and significantly associated with iPAs ($p=0.002$). Regional disparities were noted, with higher prevalence in Khyber Pakhtunkhwa/FATA (7.43%) versus Sindh (2.11%) and Punjab (0%).

Conclusion/Recommendations: This first multicenter study in Pakistan reports a 5.46% prevalence of iPAs, highlighting the role of advanced MRI (1.5T) in detection. Headache emerged as a significant clinical correlate. Regional variations suggest potential disparities in healthcare access or diagnostic practices, warranting further investigation. These findings underscore the need for standardized PI management protocols in resource-limited settings.

Keywords: Pituitary incidentaloma, non-functioning adenoma, MRI, prevalence, Pakistan,

SP 30:

Abstract Title: Beyond seizures: A case report on autism spectrum disorder in a child with tuberous sclerosis.

Alishba Farman, Manahil Hifazat ,

Objective/Hypothesis: Tuberous sclerosis may initially present with autism and subtle seizures even when early EEG and MRI are inconclusive.

Study Design: Single-patient case report (retrospective descriptive).

Materials and Methods: Retrospective review of clinical records, developmental assessments (DSM-5 criteria for ASD and local autism-school evaluations), serial EEGs (2018, 2021), brain MRI (2018: T2/FLAIR; 2025: T2/FLAIR with CT correlation for calcification if available), dermatologic exam, abdominal ultrasound, and management records. Parental informed consent for publication obtained.

Results: 9-year-old male with early speech delay and ASD features presented with absence seizures from age 2. Early EEGs (2018, 2021) were unremarkable; initial MRI (2018) showed nonspecific T2/FLAIR hyperintensities. Repeat MRI (2025) identified bilateral cortical/subcortical tubers and calcified subependymal nodules consistent with TSC. Antiepileptic regimen (valproate, laterlamotrigine) resulted in improved seizure control; ASD features persisted, requiring ongoing behavioral and speech therapy.

Conclusion/Recommendations: Conclusions: TSC can show delayed radiological evolution despite early clinical signs (ASD, subtle seizures). Repeated imaging and continued developmental surveillance are recommended when clinical suspicion remains. Recommendations: 1) Screen children with ASD and unexplained seizures for cutaneous stigmata of TSC and consider baseline neuroimaging. 2) If initial imaging/EEG are inconclusive but suspicion persists, repeat MRI after an interval or upon clinical change. 3) Coordinate multidisciplinary care (neurology, developmental pediatrics, dermatology, genetics, behavioral therapy). 4) Offer genetic testing/counseling where available.

Keywords: tuberous sclerosis complex; autism spectrum disorder; pediatric epilepsy; cortical tubers; case report.

SP 31:

Abstract Title: ASSESSMENT OF SPLENIC FUNCTION AMONG TRANSFUSION DEPENDENT THALASSEMIA PATIENTS

Abdul Basit,

Objective/Hypothesis: o assess the prevalence and timing of the onset of hypersplenism in transfusion-dependent thalassemia (TDT) patients and to examine the relationship between the number of transfusions and the development of hypersplenism.

Study Design: A retrospective cross-sectional analysis

Materials and Methods: The study analyzed TDT patients to monitor splenic enlargement and function. Parameters including annual transfusion frequency, hemoglobin levels (pre- and post transfusion), and counts of platelets and leukocytes were recorded. The study compared patients with intact spleens against those who had undergone splenectomy to determine the indication and timing for surgical intervention

Results: The average age for developing hypersplenism was 6.86 ± 1.9 years, with splenectomy typically occurring at an average age of 15.1 ± 4.6 years. The average number of annual transfusions was 19.1 ± 7.7. In splenectomized patients, while hemoglobin levels remained statistically unchanged post-surgery (6.8 g/dl to 7.1 g/dl), there was a marked increase in platelets (from 210.4 to 480.7 per microliter) and leukocytes (from 7.3 to 14.6 per microliter).

Conclusion/Recommendations: Splenectomy in TDT patients significantly increases platelet and leukocyte counts but does not drastically change the required hemoglobin levels. The study highlights that hypersplenism typically develops in the first decade of life, and clinical management should focus on monitoring the spleen's manufacturing of cells versus the marrow's capacity to prevent complications.

Keywords: Thalassemia, Splenic Function, Hypersplenism, Splenectomy, Transfusion-Dependent, Hemoglobin, Platelets.

6. Nursing

BSN 1:

Abstract Title: Assessment of Knowledge regarding Nutrition Among Antenatal Mothers in a Tertiary Care Hospital, Peshawar

AFSHAN

Objective/Hypothesis: The aims of the study is to assess the knowledge level regarding nutrition in pregnant women at tertiary hospitals because it will contribute to optimal fetal growth, better outcomes in childbirth, improved perinatal survival, and the potential for better long-term health in both the mother and child.

Study Design: This study utilized a descriptive cross-sectional research design. The research was carried out during a specified timeframe with expectant mothers undergoing regular antenatal services at a tertiary public healthcare facility. The design was chosen to evaluate the current state of nutritional knowledge at one specific moment without implementing any interventions. This study utilized a descriptive cross-sectional research design. The research was carried out during a specified timeframe with expectant mothers undergoing regular antenatal services at a tertiary public healthcare facility. The design was chosen to evaluate the current state of nutritional knowledge at one specific moment without implementing any interventions

Materials and Methods: The research was conducted at Khyber Teaching Hospital in Peshawar, involving 116 antenatal mothers chosen via proportionate random sampling from three obstetric wards. Data were gathered through a validated, self-reported questionnaire addressing sociodemographic characteristics, obstetric background, and nutrition-related knowledge and attitudes. Nutritional understanding was evaluated through Likert-scale and yes/no questions. A score of 70% or higher was classified as good knowledge. Descriptive statistics were used to analyze the data.

Results: The majority of participants were between 25 and 29 years old (40.5%), had completed primary education (68.1%), and were homemakers (87.9%). In total, 72% (n=83) of expectant mothers showed strong nutritional knowledge, whereas 27% (n=33) exhibited inadequate knowledge. While overall awareness of balanced diets, as well as iron and folic acid consumption, was adequate, deficiencies were noted in understanding specific nutrient needs and advised dietary habits during pregnancy.

Conclusion/Recommendations: The result suggests that knowledge of nutrition among pregnant women during antenatal care should be improved for better pregnancy outcomes. It requires proper coordinated effort between health care provider for maternal and child health outcomes. In conclusion the knowledge of Nutrition among antenatal mother during pregnancy

was inadequate. The study might have small size which may limit the generalizability of the finding to the entire population of pregnant women in Khyber teaching hospital (KTH). It is important to a diverse and presentative sample to ensure the result accurately reflects the population. Nutrition education programs should be carried out by medical centers, which should be directed towards women in rural areas. The governmental, non-governmental organization, health extension workers and other health care provider should emphasize nutrition education programs among pregnant women. Nutrition education, in depth counseling and encourage of pregnant women to take iron supplement and folic acid during their Antenatal Care will improve the nutrition knowledge of pregnant women.

Keywords: Nutritional knowledge, antenatal mothers, pregnancy, anemia

BSN 2:

Abstract Title: Knowledge, Attitudes and Practices regarding body weight management among Overweight and Obese female patients in tertiary care hospitals, Peshawar.

UMAIR ULLAH

Objective/Hypothesis: 1) To assess knowledge, Attitudes and Practices regarding body weight management among overweight and obese female patients. 2) To identify any significant association between demographic variables and knowledge, attitudes, and practices regarding weight management.

Study Design: Quantitative cross-sectional study

Materials and Methods: 1) Study Setting: (A public and private tertiary care hospitals Peshawar). 2) Sampling Technique: (Convenient sampling). 3) Sample Size: (312 participants). 4) Inclusion criteria: Female patients (Overweight and Obese) and AGE (18 years and above). 5) Exclusion criteria: (Pregnant women's) and (Critically Ill Patients). 6) Time duration: (3 months). 7 Data Collection Tool: Questionnaire 8) Data analysis: In descriptive statistics, median for Continuous data, frequencies and percentages for categorical variables, in inferential statistics Chi-Square Test was applied.

Results: The study showed significant association between knowledge categories with education, income and BMI with a p-value of 0.009, 0.003, 0.048 respectively. Practices have significant association with income, and obesity related diseases with p value of <0.001, 0.008 respectively. They showed good knowledge, neutral attitudes, and moderate practices regarding body weight management. Conclusion/Recommendations: Conclusion: In conclusion, overweight or obese patients demonstrated good knowledge, neutral attitudes, and moderate practices regarding body weight management. These findings indicate the importance of delivering educational content but also addressing underlying attitudinal barriers and behavioral patterns. Interventions regarding gender, age, and residential context can improve effectiveness.

Recommendations: Future studies should explore and investigate the role of psychosocial determinants such as motivation and self-efficacy. Expanding research across multiple center's and regions.

Keywords: 1) KNOWLEDGE 2) ATTITUDE 3) PRACTICE 4) OVERWEIGHT and OBESE